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### **Executive Summary**

This is the Ninth Annual Report of the Institute, this gives details of various activities of the Institute, such as the achievements of our students and faculty, the new infrastructure being developed, collaboration, co-curricular activities like sports and cultural events and many other exciting things from the campus.

With every passing year, the institute has been able to create an unmatched reputation for itself in academia. The institute is able to attract some exceptional talent of faculty, staff. **The Institute has 53 full-time faculty members** all holding Ph.Ds from prestigious institutions from across the world, mostly from the US and Europe and globally acknowledged for their research contributions. The Institute also has furthered links with international and national peer universities, enabling enhancement of research and educational programs at the Institute.

We currently have **1,414 students** in our B.Tech., M.Tech., and Ph.D. programs, and continue to attract and retain high-quality researchers and scholars The Institute has played a significant role in pushing the frontiers of knowledge. Our faculty, students, and staff have created a niche for the Institute in the world of science and technology. This has been duly recognized in the form of various awards and honors to the faculty including fellowships of professional societies, editorships of international journals, and best paper awards to the students. Faculty and research scholars are engaged in innovative research on forefront technologies the faculty and students have deployed more than **10 new technologies** last year. **185 research papers were published by faculty and students, including 58 journal papers, 123 conference papers, four workshop papers, and seven book/book chapters.** 

The faculty was **invited to more than 102 national and international seminars** as speaker or guest and continues to receive several best paper and poster awards. The faculty members also received several awards and recognitions for their service to the profession. A professor is designated as the first **Global Family of Anyang City**, Korea due to the effort of building the partnership between India and Korea.

The institute is devotedly working towards establishing more research centres and strengthening the infrastructure for research. The sponsored research has been a key factor in the creation of the infrastructure while the establishment of the amenities in some of the emerging areas of technology. Last year the institute has been able to get **35 researched projects sanctioned**, adding up to an amount **over 14 Crores**.

IIIT-Delhi will be graduating its 6<sup>th</sup> batch of around **200 students** this November. The Placement of Class of 2017 has been exceptionally great. Received **342 total offers** out of which 123 were from A+companies offering an average compensation of more than 10 Lakhs. The **average salary this year was around 12.36 lakhs with the highest being 35 Lakhs.** More than 12% or students of Class of 2017 are going for higher studies. Our graduating students have received **offers from more than 19 foreign universities** including Carnegie Mellon University (CMU), University of Cambridge, Georgia Tech, University of Southern California, University of California San Diego, University of Waterloo, Purdue

University and many more. Our students are also going to some of the very prestigious Indian institutes for higher studies and have **received 5 offers** from Indian institutions like IITD, IITG, IITB, NID etc. **This year an alum from the class of 2015, Utkarsh Gupta secured All India Rank 78 in UPSC examination.** 

IIIT-Delhi has a rich tradition of pursuing excellence and has continually re-invented itself regarding academic programmers and research areas. Taking our legacy ahead, this year we started our **two new breakthrough B.Tech. Courses**, 'Computer Science and Design' and 'Information Technology and Social Science'. We always make sure that our students are exposed to challenging research-based academics and a host of sport, cultural and organizational activities on its vibrant campus, this resulted in an outstanding performance by the graduating batch.

This year for the first time the Institute celebrated their **Foundation Day on 8th of September**. A great event was organized as part of this, all the current and ex-students, teachers, and board members were invited to the event. A public lecture was also delivered on this occasion by the veteran journalist, Mr. Shekhar Gupta, who spoke on "Transforming Politics in the Modern Age and the role of Media."

The **Phase II construction** is about to complete, and the institute will have more space for classes, labs, hostels, offices and other facilities as well. After the completion of Phase II, the campus will be able to accommodate total **student strength of 2,500**. The hostel capacity will also rise to **around 1,600 students**. The construction contractors worked extremely hard to build the phase II of campus speedily. It is thrilling to see the enormous progress they have made so far, but one has to be conscientious also of the long journey ahead to fulfill the aspirations to build a university of global stature at IIIT-Delhi.

IIIT-Delhi is aware of the enhanced expectations from the student community and the general public and the institute strives to live up to the image that has been so assiduously built up over the years. It is a continuous endeavor to work towards attaining higher standards of excellence in all spheres of activities. The management is committed to achieving certain goals to create an environment wherein intellectually capable, innovative and entrepreneurial professionals are nurtured and trained to work unceasingly to serve the nation and society. IIIT-Delhi intends to keep pace with the continual progress in the fields of science and technology.





### **About Us**

#### **Establishment and History**

Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi) was created as a State University by an Act of Delhi Government (The IIIT Delhi Act, 2007) empowering it to do research and development and grant degrees. IIIT-Delhi was officially established in June 2008 and started its academic programs in the same year with its first batch of 60 B.Tech. students.

Since then, it has come a long way, with 50+ faculty members specializing in diverse areas of Computer Science, Electronics, Mathematics, Computational Biology, Design, Social Science & Communications Engineering. It has earned a good reputation in India and abroad for being a center of quality education and research in IT and allied areas.

IIIT-Delhi is an autonomous Institute, with the Board (Current Chairman: Mr. Kiran Karnik) fully authorized to take all important decisions, including student intake and fee structure. The Board is supported by the Academic Senate of the Institute, which is empowered to make all academic policies, and which advises the Board on starting new academic programs.

#### **Our Mission and Vision**

The Institute's stated mission is to be a global center of excellence in Information Technology education, training, and research. Its twin aims are:

- To carry out advanced research and development in information and software technologies, and in leveraging IT in specific domain areas.
- To train and educate, at both undergraduate and postgraduate levels, engineers of outstanding ability who can become innovators and new product creators.

It aims to encourage innovation and entrepreneurship in specified domain areas of IT. Towards this end, it plans to organize itself as a conglomerate or R&D centers, some of which would be a partnership with different companies and global organization. All centers will also be engaged in teaching and thesis guidance. These centers, with various labs, will be the hub of activity, with active contribution from faculty and students.

The vision of the Institute is to be a world-class R&D-led institute of higher education in IT and allied areas which:

- Is globally respected for research and education
- Has thriving UG and PG education programmes
- Is socially relevant, industry-facing, globally linked

#### **Infrastructure**

#### **Building Resources**

The Institute's full-fledged campus is operational from August 2012 in Okhla, New Delhi. The campus is spread in sprawling 25 acres of land which is located in the phase III Okhla Industrial Estate. The Institute currently has a built up area of 32,000 sqm. including lecture halls, classrooms, research labs, instruction labs, boys' hostel, girls' hostel, dining and student centre, space for student clubs, etc. It also has a general purpose playing field, tennis courts, basketball court, volleyball court, etc.

Construction of Phase II of the campus is nearing completion. Mr. Manish Sisodia, Deputy Chief Minister of Delhi, laid the foundation stone for the second phase of the campus on 5 May 2015, Overall around 78% of the works planned in phase II is completed. The status of the construction of all blocks is as under:

**New Academic Block** 8 stories, with 4 Nos 100 seater lecture halls, 58 labs, 116 faculty rooms. Office spaces are likely to be delivered as planned. All the fitting and electrical work are in the advanced stage of completion. **Faculty Residence Block** (44 flats); **both the hostels** with 21 married accommodation and 424 double seater rooms (in total); **lecture hall block** with one 500 seater and two 300 seaters stepped lecture theatres, various capacity classrooms, and instruction labs and the **sports block** is expected to be completed by December 2017. The work of the solar power plant on terraces of all new buildings with a capacity of around 180 KWp has also been awarded.

#### **IT and Library Resources**

The Institute has a campus-wide computer network with a redundant 10-gigabit fiber backbone, 1 Gbps NKN link with 104 Mbps backup ISP link, and a Data Centre with 67 servers and 85TB storage, LAN and Wi-Fi access throughout the campus including hostels, classrooms, and residence. All classrooms are equipped with multimedia capability, including projectors and audio systems.

The Library and Information Centre of the Institute is housed in a separate building in its Campus. It is a user-focused centre of learning resources that meet all the current and future requirements of IIIT-Delhi academic and research fraternity regarding learning, teaching, research, and training programs. The Library is fully automated using RFID technology with EM security system. The library is enriched with a vast collection of print and electronic resources in all area of interest.

#### **Our Management**

#### **General Council**

The General Council is the apex body of the Institute, chaired by Hon'ble Lt. Governor of Delhi. The current members of the General Council are:



Mr. Anil Baijal Hon'ble Chancellor of the Institute

#### **Other Members:**

- Mr. Kiran Karnik, Chairman BOG-IIIT-Delhi
- Ms, Neeta Verma, DG NIC
- Prof. Ashutosh Sharma, Secretary(DST)
- Prof Pankaj Jalote, Director, IIIT-Delhi
- Ms. Punya Salila Srivastava, Secretary(TTE)
- Mr. R Chandrashekhar, President, NASSCOM
- Ms. Ajay Prakash Sawhney, Secretary, DeiTy
- Dr. S Christopher, Head DRDO
- Mr. S.N.Sahai, Principal Secretary (Finance)

#### **Board of Governors**

The Board is the main policy and decision-making body of the Institute. The current members of the Board are:

Mr. Kiran Karnik, Chairman, Ex-President NASSCOM		
Dr Anand Deshpande, Founder, Chairman & MD, Persistent Systems		
Mr. Arvind Singhal, founder Technopak		
Mr. S D Shibulal, Co-Founder, Infosys and Axilor Ventures		
Mr. Praveer Sinha, Chief Executive Officer & Executive Director of Tata Power Delhi Distribution Limited		
Prof Dinesh Singh, Former Vice Chancellor of University of Delhi		
Prof. Pankaj Jalote, Director, IIIT-Delhi		

Ms Indira Parikh, Former Founder President of FLAME
Ms. Punya Salila Shrivastava, Secretary (TTE)
Mr. S N Sahai, Principal Secretary (Finance)





## **Education**

#### **Current Academic Programmes**

The Institute offers undergraduate programmes in Five areas leading to B.Tech degrees in CSE, ECE, CSAM( Computer Science and Applied Mathematics), CSD (Computer Science and Design), and ITSS (Information Technology and Social Science); M.Tech in CSE / ECE / CB, and specialized M.Tech degrees in Mobile Computing, Information Security, Data Engineering, VLSI & Embedded Systems, Communication & Signal Processing and Computational Biology; as well as Doctoral programmes in Computer Science, Electronics & Communication, Computational Biology and Mathematics. The primary objective is to impart specialized training on the latest technological advancements in CSE and ECE domains.

#### **Total student strength**

Total Student	: Strength as on 31s	t July 2017	
Level	Course	Batch	Student Strength
	CSE	2011	1
	CSE	2012	4
	ECE	2012	2
	CSE	2013	29
	ECE	2013	8
	CSE	2014	123
	ECE	2014	33
	CSE	2015	125
B.Tech.	ECE	2015	58
	CSE	2016	125
	ECE	2016	69
	CSAM	2016	58
	CSE	2017	126
	ECE	2017	92
	CSAM	2017	66
	CSD	2017	49
	ITSS	2017	48
Total No of I	B.Tech. Students o	n Roll:	1016
	CSE	2015	13
	ECE	2015	4
	СВ	2015	6
	CSE	2016	58
M.Tech.	ECE	2016	37
	СВ	2016	9
	CSE	2017	69
	ECE	2017	50

	СВ	2017	10
Dual Degree	CSE	2013	3
Total No of M	.Tech. Students o	n Roll:	259
	CSE	2010	5
	CSE	2011	5
	CSE	2012	12
	ECE	2012	1
	CSE	2013	15
	ECE	2013	7
	CSE	2014	8
	ECE	2014	8
	СВ	2014	1
	CSE	2015	16
	ECE	2015	8
Ph.D.	СВ	2015	3
	CSE	2016	9
	ECE	2016	17
	СВ	2016	1
	Mathematics	2016	2
	CSE	2017	8
	ECE	2017	6
	СВ	2017	6
	Mathematics	2017	1
Total No of Ph.D. Students on Roll:			139
Total No of St	udents on Roll:		1414

#### **Fifth Convocation**







The Institute conducted its 5<sup>th</sup> convocation on August 7, 2016, at its campus in Okhla. A total of 2 Ph.D., 163 B.Tech., 3 Dual Degree and 79 M.Tech. degrees were awarded to the graduating students in the presence of Mr. Naveen Tewari, Founder, and CEO, InMobi, a global mobile advertising, and technology platform. Shri Kiran Karnik, the Chairman of the institute's Board of Governors; and Prof. Pankaj Jalote, Director, IIIT-Delhi.

#### **Medals winners**

The Chancellor's Gold Medal to B.Tech. Students	Megha Arora
	Alakh Dhruv Chopra
Best Academic performance in B.Tech. ECE	Shreya Singh
All Round Performance Medal	Sarthak Ahuja
	Ankush Jolly
Best B.Tech. Project award for Technology Research	Prateekshit Pandey
Projects in CSE	
Best B.Tech. Project award for Technology	Mansi Panwar
Entrepreneurship Project	Shashank Gautam
Best M.Tech. Thesis Award (CSE)	Anurag Chowdhury
	Yogesh Kumari
Best M.Tech. Thesis Award (ECE)	Ankita Raj
	Md. Ayatullah Maktoomi

#### **Student Graduation**

The students graduated for 2016 and cumulative graduated since its inception are as under:

Programmes	Expected to graduate on 21st August 2017	Total Passed till December 2016
B.Tech.(CSE)	87	429
B.Tech.(ECE)	25	37
M.Tech.(CSE)	45	229
M.Tech.(ECE)	31	86
M.Tech.(CB)	4	0
Ph.D.	9	9
Dual Degree	0	9
<b>Total Graduated Students</b>	201	799

#### **Scholarship and Assistantship to B.Tech. Students**

The Institute provides two types of fee waiver as per the norms of Ministry of HRD.

- 1. **Income based Fee Waive**r: 100 % fee is waived who are below the poverty line if their family income is up to 4.50 LPA, they get 50 % or the total tuition fee waived off, and if a student's family income is between 4.50 LPA to 6.00 LPA, 25% fee is waived off. More information about this is provided on our website
- 2. **Merit Based Scholarship**: Any Delhi students whose JEE rank is less than 2000 will be given a scholarship of Rs 1lacs / year (which can be adjusted against the fees) for the entire duration of their B.Tech. at IIIT-Delhi, provided they maintain a CGPA of 8.5 or above. (i.e. they will get Chairman's Scholarship the for the first year. For subsequent years they will get the scholarship if their CGPA is 8.5 or above.)

Scholarships given to students

Batch	No. of students who got 25% waiver			Merit based
B.Tech. 2013	5	2	-	-
B.Tech. 2014	8	13	3	-
B.Tech. 2015	6	9	1	6
B.Tech. 2016	14	15	3	4

<sup>\*</sup>including six merit based

#### **GATE Scholarship to M.Tech. Students**

Financial Assistantship is available for some students in the form of Teaching Assistantship. The same will be paid through AICTE-DBT to the student's' account directly. Only full-time regular students are eligible for an assistantship. This will be viewed as remuneration for the academic work (teaching/research) being performed for the Institute. Last year total 104 Scholarships were granted to the M.tech. students. 39 to ECE students, 57 to CSE students, and 8 to CB students.

#### **Ph.D. Students**

The financial assistantship is available for some Ph.D students in the form of *teaching assistantship or research assistantship*.

- **Research assistantship**. The students under this plan are expected to help the faculty members in various research projects. They may be assigned limited academic duties.
- **Teaching assistantship.** The students under this plan are expected to help the instructors in various courses for the smooth running of the course

Other than this our scholars get research grants and scholarships from a many organization like TCS, IBM, etc.

Fellowships our students have received till now

Fellowship Head	Total
TCS	19
Intel	1
IBM	1
PM Fellowship	2
UGC	7
Institute	36
Project	9
Sponsored	10
CSIR	3
Visvesvaraya	24
QUT	2
Joined Job	8
In sixth year or above	2
Total No. of students	124



# Research Development and Innovation

#### **Research Centres**

#### **Infosys Centre for Artificial Intelligence**

Infosys Centre for Artificial Intelligence celebrated its first anniversary this year. In the last one year, the centre has hosted workshops on topics like "Computer Vision for Persons with Disabilities," "Assistive Vision in conjunction." The centre organized IEEE Winter School on Machine Learning in Biometrics jointly with IEEE ISBA. The centre currently has 11 core faculty members, 9 Ph.D. students, and many B.Tech. and M.Tech. students.

#### **Cybersecurity Education and Research Centre**

CERC completed three years on 23rd Jan 2016. CERC graduated one Ph.D. student, 4 Masters students, and many Undergraduates worked with our faculty throughout this year. The centre also added one core faculty to the list of Faculty – Dr. Arun Balaji Buduru, who is a freshly minted Ph.D. from Arizona State University. Currently, CERC has 10 Ph.D. students, 6 Masters Students, 7 Research Associates, and about 10 UG students working on various projects. The centre also conducted multiple Continued Education Programs (CEPs) for government organizations, and participated in many technical programs outside campus within India and outside India. CERC has raised funding from a government agency like Ministry of Electronics and Information Technology (Meity), Defence Research and Development Organisation (DRDO), and industry organizations like Adobe, RSA, and Persistent Systems.

#### **Centre for Computational Biology**

The Centre for Computational Biology (CCB) has turned two this year. In last two years, the centre has grown in terms of faculty strength, with nine core faculty and six adjuncts/visiting faculty, and also regarding expertise in the areas of systems biology and bioinformatics/biostatistics. The centre currently has 6 Ph.D. students and 19 M.tech. students. Last year the Centre for computational biology had hosted two workshops, "Emerging Trends in Bioinformatics & Health Informatics," and One day workshop (Introductory Sessions and Hands-on training sessions) on "Big Data in Genomics."

Department of Biotechnology has also approved Rs. **269.20 Lakhs to support our M.Tech. in Computational Biology program** at Centre for Computational Biology, IIIT-Delhi. This includes support for our M.Tech. fellowships, infrastructure, faculty support, travel, contingency, etc. for M.Tech. students.

#### **Academic Research and Publications**

We continue to encourage our faculty and students to publish their work in top quality international avenues. The list of papers published last year until April 2017 is 58 in national and international journals, 123 in national and international refereed conferences, 4 as workshop papers and 7 as books/book chapters. The detailed list of publications is given in **Appendix A**.

#### Technologies and tools developed and deployed

The Institute remains committed to developing technologies that can be transferred for commercial exploitation or use by other organizations. This year, out of many technologies developed at the Institute, 9 new technologies reached the next level. One of them is a computational tool (combining kinetic Monte Carlo model and data analysis) that can be help improve precision/personalized strategies (optimal strategies) in cancer therapy and for cancer subtype classifications.

Another one is AASMA: Advanced Application for Social Media Analytics. Fully developed at IIIT-Delhi. Requested by 75+ state and federal government agencies in India. Deployed in 40+ organizations. The complete system is 650,000+ lines of code, and our native code is 34,000+ lines. We added 15+ installations in the period of evaluation (1 May 2016 – 30 April 2017). The government of India has officially declared this project as STRATEGIC in nature and is closely monitoring the growth of the same. The Detail list of technologies & tools developed & deployed is given as an **Appendix B.** 

#### **Patents**

This year our faculty and students filed for 4 patents. The patents include inventions like "Cuffless Blood Pressure Estimation Solution Using Electrocardiogram and Photoplethysmogram," "Smartphone Based Health Monitoring Using the Inbuilt Camera" and many more inventions of public use, which are mentioned in **Appendix C** in detail.

#### **Sponsored Research Projects**

IIIT-Delhi lays strong emphasis on the sponsored research, collaborative research funded by the national and international agencies and strong industrial interaction. The institute has set up modern laboratories and the supporting infrastructure.

The sponsored research has also emerged as a crucial factor in the creation of the infrastructure while strengthening the facilities in some of the emerging areas of technology. The list of projects that were sanctioned last year and ongoing projects is given in **Appendix D**, and a summary is given below.

#### **New Projects**

Funding Agencies	Number of Projects	Total Sanction Amount (In Lakh Rs.)
PEC University of Technology	1	12.75
DST-SERB	5	123.51
ARDB-DRDO	1	10.08
IIT Delhi/Joint Project	1	8.76
Microsoft	1	1.56
SERB	1	57
NPTEL	1	3.95
AFRL	1	39.48
Persistent Systems Pvt Ltd	1	44.00
Anyang	2	7.76
DST	1	6.30
Google	1	0.20
DBT	1	269.20
Infosys	1	800.00
TOTAL	19	1384.55

#### **New Consultancy Projects**

Funding Agencies	Number of Projects	Total Sanction Amount (In Lakh Rs.)
Savita Telecom Services	1	1.50
Beehives systems	2	12.50
Staq Technology	2	11.05
МНА	1	1.80
IEEE	2	6.29
WESSEE	1	6.80
Exit 10 Marketing	1	2.50
Unilever Pvt. Ltd	1	4.95
TCS	1	7.00
Yatra	1	4.40
BEL	1	8.65
Tata Advance System	1	1.00
Anyang Creative Industry	1	4.81
TOTAL	16	73.25

#### **External Collaborations**

The Institute has an exceptional reputation for its external collaborations. Strong working relationships with a wide range of professionals, universities, research councils and policy makers ensure that we have up-to-date and relevant course structure.

We run a wide range of highly successful initiatives, including contract research, in-house training, consultancy, and conferences. Sharing this expertise, we have formed strong working relationships with academic and non-academic organizations.



A few of our collaborations:

- The Institute Partner with NEN, a flagship initiative of the Wadhwani Foundation
- The Institute collaborated with GE India Technology Centre Pvt. Ltd. For 1 Year to evaluate technology, exploring research opportunity, and engaging in future research between GE and IIIT-Delhi.
- Associated a partnership with Tata Consultancy Services Limited ('TCS'), to promote the technological advancement for both the organization which is of common interest

Our faculty has been collaborating with colleagues in other institutions in the country, as well as institutions across the world. Last year, more than 30 faculty members were involved in external collaboration with scientists, industries, research labs, etc. Overall, the faculty was engaged **in 102 external collaborations**,

Out of these collaborations, **19 are with industry labs** and corporate such as Dr. Mayank Vatsa has collaborated with Dr. Nalini Ratha, IBM TJ Watson Research Center to do research on Deep Learning. Dr. Pravesh Biyani has collaborated with Dr. Akshay Soni, Yahoo-inc, USA. Dr. Saket Anand has collaborated with Dr. Ravi Kumar, Infosys Advanced Engineering Team, Mysore, and working on a joint project to build 'Autonomous Golf Cart.

Out of 102, as many as **83 collaborations were with academic**, such as Dr. Richa Singh collaborated with Prof. Afzel Noore, West Virginia University. Dr. Rahul Purandre collaborated with Dr. Anita Sarma from Oregon State University, USA, and they are currently working on a project – Improving Source Code Search using Entity Retrieval Approach. Dr. M. S. Hashmi is currently working on a project, "Development of multi-band circuits and components for SDR applications" in collaboration with Prof. Fahdel M. Ghannouchi (University of Calgary, Canada).

A detail of all the faculty collaboration is given in **Appendix E.** 



## **Incubation**

#### **Incubation Center**

The Incubation Center has been operational for quite some time and has been actively involved in developing the paradigm of entrepreneurial mindset at the institute. The center is focused towards fostering the entrepreneurial spirit & abilities and promotes ideas, research activities into entrepreneurial ventures. It provides a common working platform regarding guidance, mentoring, value based collaboration, incubation, physical co-working spaces. It aims at driving the students towards innovational excellence to convert path-breaking business ideas into self-sustaining business ventures.

#### **Grants and Support**

This year the Incubation Center has received an approval for grant **of around 10 Crore** from National Science & Technology Entrepreneurship Development Board (NSTEB) DST under NIDHI (National Initiative For Developing And Harnessing Innovations) - Technology Business Incubator scheme

#### **Section and Company**

IIIT-Delhi Innovation & Incubation Center or Icube is a non profit Sec-8 company, created for fostering innovation by supporting startups in the Institute. Icube is recognized by Delhi Government and the Department of Science & Technology, Government of India. It has also collaborated with organizations like Adastra IP, TiE Delhi-NCR, National Entrepreneurs Network, iSpirt Foundation to name a few.

#### **Advisory Board**

The incubation center has an intellectual board of advisors comprising of Founders of organizations, faculties, and industry experts. Our current advisors are as below:

#### **Avinash Raghava**

Co-Founder & Fellow at iSPIRT Foundation

#### **Arihant Patni**

Managing Director at Hive Technologies and Co-Founder Nirvana Venture

#### **Sharad Sharma**

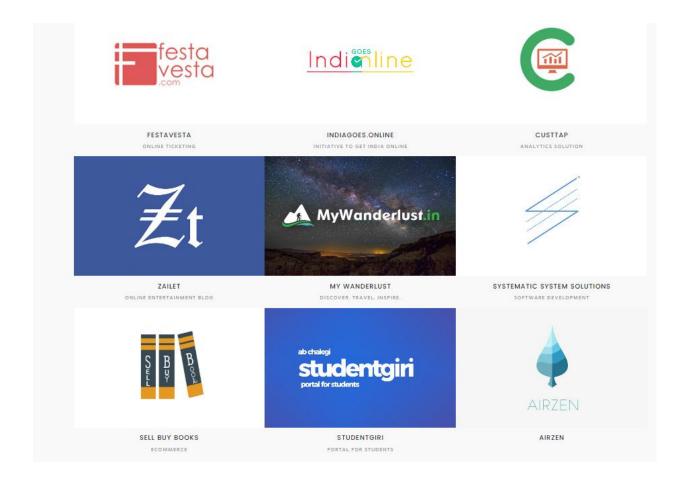
Co-Founder Teltier

#### **Seminars and Workshops**

- Seminar on Entrepreneurship
- "My Story" Session
- Snackchats
- Seminar on Intellectual Property Rights Management
- (1) Hack:
- Entrepreneurs, developers, designers, students were invited.



#### **Start-ups being incubated this year**







# Outreach and Professional Services

## <u>Conference/Short Courses/ Seminars /Workshops organized at IIIT-Delhi</u>







IIIT-Delhi has organized many conferences, seminars, workshops, short courses in the past academic year. Some of these are highlighted below:

#### **Seminars**

S.N.	TOPIC	DATE	GUEST
1	Quantitative Proteomics Analysis And		
	Visualization	9/5/2016	Dr. Amit Kumar Yadav
2	Vaccination, Herd-immunity, And Choices -		
	Population Dynamics to Policy-Making	15/5/2016	Dr. Samit Bhattacharyya
3	Stochastic model of Protein Bursts in the		
	Lactose Operon of Escherichia Coli	23/5/2016	Dr. Atul Narang
4	Bioinformatics-based solutions for Human		Dr. Gajendra P.S.
	Healthcare	6/6/2016	Raghava
5			Dr. Padmanabhan
	Institute Seminar	13/6/2016	Krishnan
6	Handwriting Recognition	1/7/2016	Dr. Venu Govindaraju
7	Green Transistors: Futuristic Energy-Efficient	4/8/2016	
	Devices		Dr. Sneh Saurabh
8	Towards an SAFE-ICU for Kids	4/8/2016	Dr. Tav Pritesh Sethi
9	Analog/Mixed Signal Design with Emerging	4/8/2016	
	and CMOS Technologies		Dr. Pydi Ganga
10	Role of Computational Biology in Crop		
	Improvement	8/8/2016	Dr. Rita Sharma
11	Lightweight Formal Methods for LLVM		
	Verification	10/8/2016	Dr. Santosh Nagarakatte
12	Challenges and Opportunities in Robotics	9/8/2016	Dr. Swagat Kumar
13	Computational Proteomics & Commercial		
	Opportunities	17/8/2016	Dr. Avinash Mishra
14	A Systems Biology Approach Towards		
	Healthy Aging	23/8/2016	Dr. Yasha Hasija
15	o Understand Host-pathogen Cross-talk In	30/8/2016	Dr. Samrat Chatterjee

	Mycobactorial Pathogonosis		
16	Mycobacterial Pathogenesis		
16	Design Automation for Fluidic Operations on Microfluidic Lab-on-a-Chips	20/9/2016	Dr. Sudin Pov
17		30/8/2016	Dr. Sudip Roy Dr. C. Mohan
	Big data - Hype and Reality	1/9/2016	
18	Corporate Job vs Entrepreneurship	15/9/2016	Mr. Vineet Agarwal
19	Economics of Internet & Network Neutrality	5/10/2016	Dr. D. Manjunath
20	Motion Averaging in 3D Reconstruction	20/10/2016	Venu Madhav Govindu
21	Fine-grained Recognition using Pose-	27/10/2016	Dyon Farrell
22	normalization	27/10/2016	Ryan Farrell
22	Towards Green Communication Networks: A	02/11/2016	Dr. Swados Do
23	Systems Approach Pindrop: Networking Substrate for High-	03/11/2016	Dr. Swades De
23	Quality Realtime Streaming	22/11/2016	Venkat Padmanabhan
24	Can Cells Think?	27/9/2016	Dr. Sumeet Agarwal
25	Personalized Medicine: From Healthcare To	21/3/2010	DI. Suilleet Agaiwai
23	Health Management	4/10/2016	Dr. Jameel Ahmad Khan
26	Machine Learning For Biomarker	7/10/2010	DI. Jameel Allillau Kildil
20	Identification In Cancer - Developments		
	Towards Its Clinical Application	25/10/2016	Dr. Dinesh Gupta
27	Targeted Client Synthesis for Detecting	25/10/2010	Dr. Diriesir Gapta
	Concurrency Bugs	05/01/2017	Dr. Murali Krishna
28	Reorganization of visual cortex following	- 5, 5-, -51	2
	late sight onset in congenitally blind		
	humans	10/01/2017	Tapan K. Gandhi
29	Computation Without Reference	12/01/2017	Paul Schweizer
30	In Search Of Missing Human Proteins: A	,,	
	Computational Perspective	17/01/2017	Dr. Debasis Dash
31	Leveraging food for better health through		
	data-driven approaches	19/01/2017	Dr. Ganesh Bagler
32	Protein - DNA Interactions In The Next		
	Generation Sequencing - era	24/01/2017	Dr. Shandar Ahmad
33	Machine learning methods: an application		
	in biology	31/01/2017	Dr. Chakresh Kumar Jain
34	Narrow-band Rate Prediction for Broadband		
	Wireless Access – How Elusive and Slippery		
	can this be?	02/02/2017	Dr. K. Giridhar
35			Prof. Sanghamitra
	Multiobjective Clustering	06/02/2017	Bandyopadhyay
36	Bioinformatics-based solutions in the field		
	of health sciences	09/02/2017	Prof. G.P.S. Raghava
37	Opportunistic Selection in Next Generation		Dr. Neelesh Mehta from
	Wireless Communication Systems: A Primer	16/02/2017	IISC-Bangalore
38	ESign: Digital Signature combined with		
	power of online authentication	02/03/2017	Prof. Rajat Moona
39	Characterization and mechanistic role of		
	biomolecules in the reversal of stress-		
	induced neurodegeneration	03/03/2017	Dr. Pravir Kumar

40	Exploiting Social Media Images and Camera		
	Sensors to Improve the Photography		
	Experience	07/03/2017	Dr. Mohan Kankanhalli
41	Automated Driving and Drive towards		DrIng. Ganesh Rao and
	Vision Zero.	08/03/2017	DrIng. Anshu Gupta
42	Hyperspectral Imaging: Applications and		
	Visualization	09/03/2017	Dr. Ketan Kotwal
43	Bayesian Argumentation via Delphi (BARD)	21/03/2017	Prof. Ann Nicholson
44			Prof. Mohan
	Industrial Applications Operations Research	21/03/2017	Krishnamoorthy
45	Delivery of Educational Contents: A		
	Homogenous Monolith? A Cognitive		
	Science Perspective	27/03/2017	Prof. Anupam Basu
46	Real Time Traffic Congestion Dashboards		
	for Decision Makers	30/03/2017	Dr. Darcy Bullock
47	Diversity Of Biomolecular Interactions	31/03/2017	Dr. Lipi Thukral
48	Non- invasive diagnosis at the point of care:		Dr. Shubhajit Roy
	Erudite and Illusive	06/04/2017	Chowdhury

#### **Workshops and Special Talks**

TITLE	DATE	GUEST
Workshop on Digital Media and Design	30/7/2016	Patrick Oliver
INDIA – KOREA ICT WORKSHOP	12/8/2016	Korean officials and diplomats
Convocation	27/8/2016	Mr. Naveen Tiwari
Public Lecture	8/9/16	Mr. Shekhar Gupta
Talk	9/9/2016	Dr. Wolfgang Gatterbauer
Technical talk	26/9/2016	DreamWorks India
Workshop	30/9/2016	Mojo Networks
RF Workshop	01-03/10/2016	
Talk	4/10/2016	Prof. Anita Sharma
Workshop	6/10/2013	Mr. Amit Shukla
INOI Workshop	13/10/2016	Dr. Smruti R. Sarangi
Workshop	15/10/2016	Dr. Chetan (Organiser)
Talk	19/10/2016	Dr. Yoram Bresler
An environmental sensitization workshop	12/11/2016	
Seminar	15/02/2017	Dr. Moses Oketch, Dr. Gill Wyness, and Dr. Claire
workshop on building effective relationships	23/03/2017	Dr. Garima Singh
workshop on preparing for and giving the		
GMAT exam	29/03/2017	Mr. Sarfraz Yusuf,
India-Korea Business Collaboration		Mr. Phil-Woon Lee (Anyang City
	28-29/03/2017	Mayor)
India-Korea Business Collaboration		Mr. Dae-Young Kim (President of
	28-29/03/2017	City Council)

India Kanas Dusinasa Callabanatian		Ma Cara IIa Iaa (Chairean af
India-Korea Business Collaboration		Mr. Sang-Ho Lee (Chairman of
		Chamber of Commerce of
	28-29/03/2017	Anyang city)
India-Korea Business Collaboration		Mr. Byung-Sun Park (President of
		the Anyang Creative Industry
	28-29/03/2017	Promotion Agency)
Winter School on Machine Learning in		
Biometrics Co-located with IEEE		
International Conference on Identity,		
Security & Behavior Analysis 2017	19 <sup>th</sup> – 22 <sup>nd</sup> Feb 2017	
IEEE International Conference on Identity,		
Security & Behavior Analysis 2017 jointly		
with Winter School on Machine Learning in		
Biometrics	22 <sup>nd</sup> – 24 <sup>th</sup> Feb 2017	

#### **Research Showcase**

Research Showcase is the annual research event of the institute which invites faculty of other institutes, industry professionals, media, students, parents and other tech-savvy visitors, not only to visit but also to participate in the competitions. This year about 200 people visited us in a day, including people from academia such as IITs and other top reputed colleges of Delhi, Government agencies such as DEITY, from industry such as Hotstar/IBM/ST Microelectronics, etc.

This year the annual Research Showcase' 2017 had participation from top colleges including IIT Guwahati, IIT Jodhpur, IIT Ropar, IIT Delhi, NSIT, DTU, and IGDTUW. We had four events - Research Posters Presentation, Doctoral Symposium, Innovation Challenge and IBM Challenge. For the first time, **Doctoral Symposium (DS) and IBM challenge** got introduced. This year IBM organized a hackathon to build an AI based Chatbot for the banking sector, which saw active participation from 51 teams out of which ten teams went on to the final round. Out of this three teams were shortlisted as top 3 winners and were given internship offers by IBM research.

#### **Summer Camp**

After the impressive success of summer school in 2016, this year as well IIIT-Delhi organized the Summer Camp at its campus for students of Class VIII and IX of Government Schools located near IIIT-Delhi. Delhi's education minister and deputy chief minister Mr. Manish Sisodia joined at both opening and valedictory ceremony. Lauding the initiative, Mr. Sisodia said other institutes and colleges should follow IIIT-Delhi's example of getting involved and paying back to the local community. This time 154 students from 6 schools took part in summer camp program this year, namely; Govt. Boys' Senior Secondary School, Harkesh Nagar; Govt. Girls' Senior Secondary School, Harkesh Nagar; Govt. Girls' Senior Secondary School, Kalkaji; RPVV, Lajpat Nagar; Veer Savarkar Sarvodya Kanya Vidyalaya, No. 1, Kalkaji, Govt Girls Senior Secondary School, Kalkaji. There was a team of 30 student volunteers and 5 Coordinators who managed this camp completely under the guidance of the Faculty and Officers.

#### **Other Outreach Initiatives**

- 1. Students teach at Government Schools: Students from IIIT-Delhi continued to volunteer teaching in 5 government schools on weekends to teach the students of class 12th. This initiative drew a great response from the school students and teachers. The students were taught various subjects like Computer Science, Communications, English, Science, and Mathematics.
- 2. Startup Fair: Start-up Fair 20I7 by IIIT-Delhi (March 2017) was organized in collaboration with IIIT-Delhi Incubation and Innovation Center. The idea behind Startup fair is to integrate students to join the Start-up work atmosphere by accepting internship opportunity. The event witnessed about 30+ start-up companies who participated from different verticals like Automobiles, Software, Electronics, Printing, Textile and others like Startup India, Getfund wave, Little Black Book, Hypothizer, IoTeraction Labs, Camp2K, Million Minds, Motoruncle and much more. The Start-Ups incubate at IIIT-Delhi Innovation and Incubation Centre like Festa- Vesta, Airzen, Online Ticketing Website and Zailet Live Online Entertainment Blog was also showcased.





## **Awards and Recognitions**

# **Faculty Awards and Recognitions**



Our faculties have received several coveted awards for their papers and posters. Many have also been granted prestigious research grants and fellowships such as the INSPIRE faculty award and research fellowship and much more. The detailed list is given in **Appendix F** 

Teaching excellence awards	6
Fellowships and Grants	5
Best Paper/Poster/ Demo Award	8
INSPIRE Faculty Award	1
Awarded First Global Family of Anyang City for Indo-Korean initiatives	1
Appreciation awards at international conferences	2
Editor / Reviewer of international journals and magazines	4
Chair of International Conferences	4

# **Faculty In National and International Seminars and as Invited Speaker**



Our faculty members attended various national and international conferences and presented their research results and gave lectures and presentations to enhance and share their academic and professional expertise. The detailed list is given in **Appendix G, and a summary is given below** 

Invited Talk/Lecture at an Indian Institute		
Workshop/Showcase/Presentation at Indian Institute		
Lecture/Talk in Indian Conferences	26	
Lecture/Talk in International Conferences	9	
Invited Talk/Lecture at Foreign Institutes	12	
Organized/Invited for Short Courses	35	

# **Professional Services by Faculty**

Our faculty members chaired and were members of several committees in national & international conferences. Many of the faculty members are part of Editorial Boards and regularly serve as reviewers of national & international journals. The list is given in **Appendix H**, and a summary is given below

VP/Chair/Co-Chair/ Editor/Associate Editor/ Area Chair of Journals	25
Chair/Co-Chair/Task-Force/Committee Member of national and international conferences	70
Reviewer of Conferences / Journals	118
Advisory for Government	4
Organised special session/lecture/workshop/symposium	
External Examiner/ Curriculum Development Committee Member	

# **Students Awards, Recognitions, and Services.**

The Students have also received around **30 awards** last year which includes fellowships, scholarships, best paper/poster award/ such as NI Academic Research Grant, Prestigious LAMP Fellowship, best doctoral symposium award etc. Our undergraduate students have also received awards that partially support graduate school in the US, e.g. J N Tata Endowment for the Higher Education of Indians.

Following the footsteps of the faculty, our students also get involved in the different services to serve the institute and also to their future profession. Our student organized and participated in many tutorial and workshop, delivered talks in prestigious seminars, was a part of the steering committee and Technical Program Committee in conferences etc. A detail of this is given in **Appendix I.** 

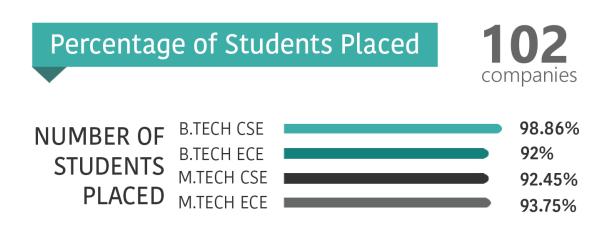


# **Placement and Internships**

### **Placements**

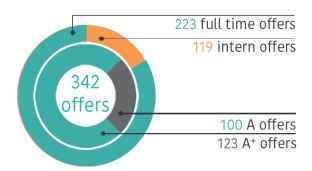
IIIT-Delhi is been able to guarantee effective employability of the students. Most of the courses involve projects, to ensures an hands-on knowledge about the area/technology. This makes them highly employable as compared to any other institute. IIIT-Delhi students enjoy the best combination of strong technical background and excellent soft skills. We do take a comprehensive examination of our students at the very beginning of the 6<sup>th</sup> semester which includes the course from all five semesters to fill the gaps in what they have studied so far.

The placement cell organizes CV writing workshops, mock interviews, Group Discussion to prepare students for the actual interviews. Then, we also have mentorship programs where our alums mentor 3rd and 4<sup>th</sup>-year students. The Placement Office is run and managed by an efficient team of office staff & students that handle all aspects of placements at IIIT-Delhi, Right from the contacting companies to managing all the logistics and arranging for the tests, pre-placement talks and conducting final interviews.



IIIT-Delhi is a research-based institute; all the faculties are Ph.D. from best institution across the world. The students are encouraged to do multiple projects which give them a hands on to apply the skill they have learned. Because of all this, the fraction of a student going for higher studies is higher. Fraction of students to go for a technical career vs. students going for non-technical or service industry is also higher. Placement stats of 2017 graduating batch is given below:

# 2017 Graduating batch





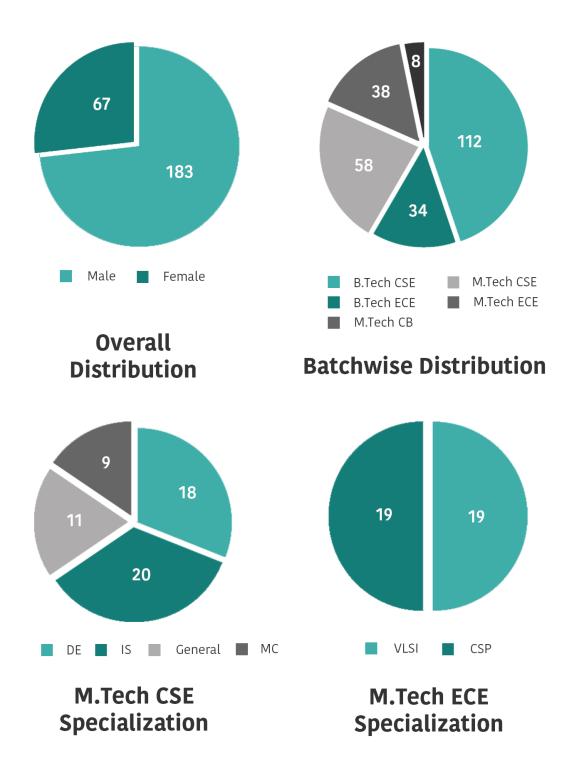
26.5 LAKHS HIGHEST M.TECH. PACKAGE (2017)

A+ Category : CTC => 10 Lakhs per annum

A Category: 5 Lakhs < CTC < 10 Lakhs per annum



Particulars	Numbers
Number of companies	102
Total Offers	342
Full-Time Offers	223
Internship offers	119
A+ Offers (Full Time )	123
A Offers (Full Time)	100
Campus % Placed	95.45
Campus Highest Compensation	35 Lacs
Campus Average compensation	12.36 lacs
Campus Median compensation	11 lacs



# **Internships**

The summer internship program at IIIT-Delhi continues to grow every year. In addition to having our students continue working on a project/research topic, through this program we also give opportunities to students from other Institutions to work in IIIT-Delhi.

Students at IIIT-Delhi can opt for following kinds of internships:

- 1. Summer Internship (May-July)
- 2. Semester Internship 4-6 months, is not a mandatory part of the curriculum. If any B.Tech. student proceeds for the same, it will be deemed as a semester break. M.Tech. students need to take prior permission from their mentors for the same.

#### **Internship Stats**

Number of companies visited	55
Total Offers	105
Long Summer Internship	61
Summer Internship	30
Winter Internship	14
Roles	Research, Software, ECE, Fin-Tech
Highest Stipend	85K per month
Overall Average Stipend	25K per month
Pre-final Offer	35
Final Offer	67

#### Few of our Recruiters





# **Student Activities**

### **Students Participation in Research Events & Competition**



IIIT-Delhi students make a major contribution to the objectives of creating, synthesizing, and disseminating knowledge. There are lots of great opportunities for students to participate in leading-edge research. Participating in research is a great way for students to learn about technology, solving problems and develop new technologies.

We encourage people from all backgrounds and perspectives to join in our studies as research participants, to help us develop a rich and complete understanding of technology. A detail of student research is given in **Appendix I.** 

# **Triquetra-2017**

A mega sports event, Triquetra, second edition, took place during the academic year 2016-2017. Triquetra, a sports festival jointly organised by Delhi Government institutions, IIIT-Delhi, NSIT, and DTU. This is the main organiser of mega event Triquetra-2017 was NSIT (financial implications). As many as 21 universities/ institute participated. IIIT-Delhi was a winner in many events including powerlifting, athletics, TT, and chess.

# Participation in other sports festivals

Sports enthusiasts will find plenty to engage themselves at IIIT-Delhi, from intra-college events.





IIIT-Delhi has been regularly organizing various sporting events like the Intra-IIIT-Delhi football tournament Joga Bonito, Table Tennis and Pool tournaments, etc. Every year the students participate in several tournaments in Delhi and outside Delhi. They were participants in the LSR Invitational tournament, also took part in Spardha-IIT BHU Sports Fest from 30th-Oct to 1st-Nov 2016, Twaran Sports Fest at

Gwalior in April 2017, RANBHOOMI-17, IIM Indore Sports Fest from 3rd-5th March 2017 & achieved positions in almost every sports activity.

Also, a group of students from IIIT-Delhi takes part in Delhi Half Marathon running for a cause. We also organize summer camps for various sports activities at IIIT-Delhi campus.

### **Fests and Events**



There are two main student festivals - the Technical Fest Esya in August 2016 which has now become one of the most vibrant tech-fests in Delhi, and the cultural festival Odyssey in March 2017. Both these festivals have large external participation and have various contests.

#### **ESYA**

'ESYA' which means a journey, an adventure –Internet of things, is the IIIT-Delhi's TechFest and is one of the largest events organized annually on the campus. IIIT-Delhi organized Esya'16 on 19th and 20th Aug 2016, with an aim to build Esya as the platform to not only showcase technical expertise but also integrate technology with social causes. After four successful years that saw promising talents and immense reception, Esya'16 saw an even larger participation. The two-day festival included a series of unique and challenging events such as **Data Hackathon, Hardware Hackathon, HuntIT, RoboWars, Chess, and Circuitrix, Prosort.** 

#### **Odyssey**

This year the theme of the event was 'Around the world in 2 days'. Seven seas, Seven Continents, Seven heavens, One place. The event was very vibrant and engaging. The two-day event was full of many attractions and events like... the dance competition, fashion show, sumo wrestling, band performances and what not. Participants from IIIT-Delhi and outside participated. This year participation from other colleges was much higher than previous years

#### **Other Events**

- TEDxIIITD
- CAMTech-X Jugaadathon
- NEN workshop
- PyData Delhi

- Workshop On Building Effective Relationships
- Environmental Sensitization Workshop
- MakersBox Hackathon on Indoor Agriculture
- Vigilance awareness week
- MakersBox Hackathon on Air Pollution
- BelaTheatre Karwaan
- Life management workshop by Ms. Pallavi Bharadwaj
- OUT for FUN V1
- BYOB Party by LitSoc

### **Student Clubs**

At IIIT-Delhi, a major chunk of students' time goes in academics as it requires hard work and focused effort. Nonetheless, there are many facilities and **18+ clubs** to grow in various ways. Students take part in a number of social and cultural activities. If they want to pursue a hobby, they just need to find some likeminded people to start their club (if not already in existence) in the Institute.



These clubs not only improve leadership skills but also help in building team spirit. Several student clubs in the institute enable students to enhance their talent in areas beyond academics. The clubs at IIIT- Delhi is based on adventure, music, software development, community work, dramatics, entrepreneurship, electronics, programming, game development, dance, painting, design, photography, chess, quizzing, sightseeing, public speaking, eco-development and more. These clubs enable students to share knowledge and mentor those looking to break into the field.

Summary report of student clubs' activities for 2016-17, is in Appendix J.

# **Community work and Self Growth**





Students are encouraged to help the society in some way or the other. Almost every student is involved with NGOs all over the country.

Community work provides students a chance to build and strengthen the broader connection with the society and the self. At IIIT-Delhi, students are required to do about 80-90 hours of community work. It enables students in applying skills and content knowledge to real needs in their local community. Students are encouraged to give back to society through compulsory community work credits. It is also mandatory for every undergrad student to earn 2 credits of Community Work and 2 credits of Self-Growth by working for 70-80 hours for each.

The institute also has a Community Work Club called Communitas - Opera, which organizes blood donation camps and facilitates student partnerships with NGOs. Main areas of intervention are listed below:

SI No	Sector	No. of Students
1	Teaching	46
2	Promote rights of education	06
3	Data Collection, Entry and Case Study	04
4	Women Welfare	04
5	Old age home	01
6	Child rights	07
7	Help Underprivileged Section of Society	20
8	Welfare of rural community	02
9	Community literacy program	01
10	Blind Education & Training	07
11	Energy Consumption behavior	06
12	Handicapped Children	03
13	Fund collection for Orphanage	02
14	Others	07
	Total	116

This year our students worked on many exceptional community work projects, few are listed below

- Students teach at Government Schools:
- Summer Camp:
- Stem Cell Donation Drive
- Collection Drive for the construction workers
- Drive for a better disposal of e-waste
- Book Distribution at Government Schools



# **Alumni Update**



The Alumni are the face of this institute, and they have in the past contributed a lot to the institute. From endowments for a scholarship to funds for hostel improvements to funding research labs, the institute owes a lot to our past students. The IIIT-Delhi family in India and overseas has become a wide network of individuals who model academic and professional excellence. We facilitate various alumni activities and maintains a database for alumni to develop closer and meaningful contacts.

We encourage our alums to stay connected and we are glad that they also take pride in sharing their whereabouts and achievements. Following are some achievements of our alums in this year

- Utkarsh Gupta from the class of 2015 secured All India Rank 78 in UPSC examination 2017.
- Shantanu Goel from the class of 2016 joined Singapore Management University for Master in Management. Last month he graduated and received the prestigious Dean's list award for his academic achievement. He is now working as an Investment banking summer analyst at TC Capital, an investment bank based in Singapore. Shantanu also received a full-time offer from Works Applications as a Software design manager in the R&D team in Singapore.
- Kshitij Jain from the class of 2015 joined the University of Waterloo for Master of Mathematics in Computer Science starting September 2016. He is working in areas of approximation algorithms and computational geometry with Dr. Anna Lubiw.
- Nikita Agrawal from the class of 2015 was working with Futures First for 2 years after graduating. After that, she joined IIM Calcutta, and Nikita is currently a part of their flagship program of management

of PGP - PGDM.

- Rudresh Pande from the class of 2015, will be joining IIM-A this June, after serving Adobe for two years.
- Megha Arora receives USD 15,000 gift from J N Tata Endowment for Higher studies for 2016 2017. This gift award is given to J N Tata Scholars who perform well in their graduate program abroad. Megha is currently pursuing her MS in CS at CMU; she is in her second semester of the program.
- Varun Gandhi, our alum from the class of 2013, currently working at Microsoft Research as a predoctoral research fellow has been accepted to Harvard for the Ph.D. program in Computer Science.
- Arushi Jain from the class of 2016 was working as a Research Fellow at MSR, Bangalore. This year she applied for Masters and Ph.D.. Arushi has got admit for Masters CS from ETH Zurich, Georgia Tech, and McGill University. She got Ph.D. offer from USC. She will be joining McGill University in the Fall of 2017, where she will be working with Prof. Doina Precup. The department has offered her international tuition fee waiver (which is almost very rare to get especially for CS department) and a research fellowship from Prof. Precup from the first year itself.
- Chandrika Bhardwaj graduated with M.Tech. in 2012 wrote some kind words for us. She is currently pursuing Ph.D. at IIT Delhi received The Fulbright Program Scholarship this August, she will be visiting Columbia University for nine months.
- Mansi Panwar, from the class of 2016 received admits from The University of Florida, The University of Texas at Dallas and Rutgers University Business School to study Information Systems / Management and she is awaiting a few more! She is currently working as a Business Analyst at Stockbay Partners in Delhi.
- Ankit Kadam from the class of 2012 has secured admission at Arizona State University (ASU) to pursue master's degree in computer science. He is also promoted to Senior Software Development Engineer in October 2016 at WaveMaker Inc. He released his debut short film Roaches(2016) on 2 Jun 2016 which has won two film awards and certificate of excellence presented by Ministry of Information and Broadcasting and National Film Development Corporation Ltd f
- Shubham Singhal has been accepted at Columbia University, New York City for Masters program in Computer Science.
- Priyanshi Mittal from class of 2013 is going for MS in Software Management at Carnegie Mellon University Silicon Valley Campus
- Vedant Swain Received the J.N. Tata Endowment Scholarship for Higher Studies in July 2016
- Secured admission to the 2 years full-time MBA program in Department of Management Studies at Indian Institute of Technology
- Ayush Goel got Admission to the Ph.D. program in Computer science department of The University of Michigan, Ann Arbor with a full scholarship.
- Vibhutesh Kumar Singh got admission in University College Dublin, Ireland for Ph.D. in Electrical and Electronic Engineering. He is doing research scholarship in Science Foundation Ireland (SFI) CONNECT Scholarship. He also received Outstanding Teaching Assistant Award in Department of Electrical And Electronic Engineering, University College Dublin, Ireland.
- Harsh Vaibhav from 2012-16 B.Tech. batch got admission into Full-time MBA course at IIM R(2017-19)

- Niharika Gupta's work with Accenture Research Labs (internship opportunity provided by IIIT-Delhi) on Domain Ontology Induction using Word Embeddings got published in 15th IEEE International Conference on Machine Learning and Applications (ICMLA- Dec 18-20, 2016, Anaheim, California, USA)
- Antara Ganguly, currently pursuing Ph.D. from IIT Bombay, Received Google Women Techmakers Scholarship 2017
- Vibhas Kumar from the class of 2012 is going to University Of Washington to pursue MBA.
- Akanksha Singh from B.tech. 2011 batch, roll no 2011012. I joined Citrix after graduation(campus placement) as Software Engineer 1. I recently got promoted to Software Engineer 2 in March of 2017.



# IIIT-Delhi in News Spotlight

Our Institute's key events and developments were covered by the media extensively. Specifically, articles related to events like Research Showcase, Summer Camp, Start-up Fair, various awards and recognition of our faculty and students. Interviews with our Dean and Director were covered by top newspapers including The Times of India, The Hindustan Times, Financial Express, Press Trust of India (PTI), Indo-Asian News Service (IANS) and Business Standard. Dataquest magazine's survey on top T school in the country also ranked us 8<sup>th</sup>.

We started two new courses this year which gather a lot of interest from media, and almost all the media houses wrote about these new courses. Some of the coverages are shown below.

2016-17 was a great year in international news coverage as well. Our projects were extensively covered and talked about in various international newspapers and news channels; BBC, CNN, UK Mirror to name a few. This year Delhi government came up with an amazing scheme of granting matching research funds to the institute which was covered extensively in the newspapers





# **Faculty and Officers**

# **Regular Faculty**

As on 1st August

#### **Aasim Khan**

Ph.D., King's College London is on the sociology and politics of communications rights in India and the impact of the Internet

Research Interest: Themes related to internet and citizenship, civic media and digital journalism in South Asia.

Write to Aasim: aasim@iiitd.ac.in Read More: http://iiitd.ac.in/aasim

#### **Alexander Fell**

Ph.D. (2012), Indian Institute of Science, Bangalore, India

Research Interests: Coarse Grain Reconfigurable Architecture (CGRA), Network on Chip (NoC), Power optimizations for embedded systems.

Write to Alex: alex@iiitd.ac.in

Read more: http://www.iiitd.edu.in/~alex/

#### **Aman Parnami**

Ph.D. (2017) Human-Computer Interaction with a minor in Industrial Design, Georgia Institute of Technology.

Research Interests: Wearable Computing, Design Research, Education Technology

Write to Aman: aman@iiitd.ac.in Read More: http://amanparnami.com/

#### **Amarjeet Singh**

Ph.D. (2009), Electrical Engineering, University of California, Los Angeles, USA

Research Interests: Sensor Networks, Data Analytics, Energy Efficiency, Health Informatics, Internet of Things.

Write to Amarjeet: amarjeet@iiitd.ac.in

Read more: http://www.iiitd.edu.in/~amarjeet/

#### **Angshul Majumdar**

Ph.D. (2012), Electrical & Computer Engineering, University of British Columbia, Canada

Research Interests: Sparse Recovery, Low-rank matrix completion, Medical Imaging, Biomedical Signal Processing, Hyper-spectral Imaging, Collaborative Filtering.

Write to Angshul: angshul@iiitd.ac.in

Read more: http://www.iiitd.edu.in/~angshul/

#### **Anand Srivastava**

Ph.D. (2003), Indian Institute of Technology, Delhi

Research Interests: OFDM based Optical Core and Access Networks, Long Reach PONs, Optical Wireless

Communication Systems, Fi-Wi Architectures, Optical Signal Processing,

Write to Anand: anand@iiitd.ac.in

Read more: https://www.iiitd.ac.in/anand

#### **Anuradha Sharma**

Ph.D. (2006), Mathematics, Panjab University, Chandigarh, India

Research Interests: Algebraic Coding Theory, Number Theory, and Algebra

Write to Anuradha: anuradha@iiitd.ac.in Read more: https://www.iiitd.ac.in/anuradha

#### **Anubha Gupta**

Ph.D. (2006), Electrical Engineering, Indian Institute of Technology, Delhi, India

Research Interests: In Engineering: Signal modeling, multi resolution/ multiscale signal processing, and applications, Wavelet Transform: Design and Applications, Biomedical Signal Processing: Computational neuroscience, ECG, and EEG signal processing, Biomedical Image processing: microscopic image analysis, fMRI signal processing. MRI signal processing: Statistical Signal Processing.

fMRI signal processing, MRI image processing, Statistical Signal Processing

Write to Anubha: anubha@iiitd.ac.in

Read more: https://www.iiitd.edu.in/~anubha/

#### **Arun Balaji Buduru**

Ph.D. (2016), in Computer Science, specializing in Information Assurance at Arizona State University

Research Interest: Cyber security, reinforcement learning, and stochastic planning.

Write to Arun: arunb@iiitd.ac.in Read More: http://iiitd.ac.in/arunb

#### **A V Subramanyam**

Ph.D. (2012), Computer Engineering, Nanyang Technological University, Singapore

Research Interests: Multimedia Security, Information Hiding, Forensics

Write to Subramanyam: subramanyam@iiitd.ac.in Read more: http://www.iiitd.edu.in/~subramanyam/

#### **Chetan Arora**

Ph.D. (2012), Computer Science, Indian Institute of Technology, Delhi, India

Research Interests: Computer Vision, Machine Learning.

Write to Chetan: chetan@iiitd.ac.in

Read more: http://www.iiitd.edu.in/~chetan/

#### **Debajyoti Bera**

Ph.D. (2009), Computer Science, Boston University, USA

Research Interests: Algorithms, Complexity Theory, Quantum Computing.

Write to Debajyoti: dbera@iiitd.ac.in

Read more: http://www.iiitd.edu.in/~dbera/

#### **Debarka Sengupta**

Ph.D. (2014), in Computer Science and Engineering from Jadavpur University

Research Interest: Applied machine learning and genomics

Write to Debarka: debarka@iiitd.ac.in Read More: http://iiitd.ac.in/debarka

#### **Dong Hoon Chang**

Ph.D. (2008), Information Management and Security, Korea University, Korea

Research Interests: Cryptography, Cryptanalysis, Cyber Security, Information Theory.

Write to Chang: donghoon@iiitd.ac.in

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#### **Ganesh Bagler**

Ph.D. (2007), in Computational Biology

Research Interests: Complex Systems, Computational Biology, Complex Networks, Bioinformatics,

Modeling and analysis of biological data

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#### **Gaurav Arora**

Ph.D. (2017), Economics at Iowa State University

Research Interest: Natural Resource & Agricultural Economics, Ecological Economics, Applied

Econometrics, Industrial Organization, Applied Game Theory, Spatial Analyses, Remote Sensing.

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#### G.P.S. Raghava

Ph.D. (1996), Institute of Microbial Technology, Chandigarh

Research Interest: Bioinformatics Application on Protein Modelling/ Engineering, Genomics and Informatics Solutions for integrating Biology (GENESIS), Integrative approach for designing biomolecules for cancer therapy, Application of bioinformatics in System Biology

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#### **Mayank Vatsa**

Ph.D. (2008), Computer Science, West Virginia University, USA

Research Interests: Biometrics, Image Processing, Information Fusion, Forensics

Write to Mayank: mayank@iiitd.ac.in

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http://research.iiitd.edu.in/groups/iab/

#### **Mohammad Hashmi**

Ph.D. (2009), Electronics Engineering, Cardiff University, UK

Research Interests: Advanced RF Technology, Passive and Active RF Circuits, Green Communication, Highly

Linear and Efficient Transmitter Design Write to Mohammad: mshashmi@iiitd.ac.in Read more: http://www.iiitd.edu.in/~mshashmi

#### **Mukulika Maity**

Ph.D. (2016), in Computer Science from IIT Bombay

Research interests: Wireless Networks, Mobile Computing, and Systems.

Write to Mukulika: mukulika@iiitd.ac.in Read More: https://iiitd.ac.in/mukulika

#### **Naqueeb Ahmad Warsi**

Ph.D. (2015), Information Theory from the Tata Institute of Fundamental Research, Mumbai

Research Interests: Classical and quantum information theory, particularly information theoretic problems

in the non-asymptotic regime.

Write to Naqueeb: naqueeb@iiitd.ac.in Read more: https://www.iiitd.ac.in/Naqueeb

#### Ojaswa Sharma

Ph.D. (2010), Mathematics and Computer Science, Technical University of Denmark, Denmark

Research Interests: computer graphics, and computational geometry.

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#### P B Sujit

Ph.D. (2006), Aerospace Engineering, Indian Institute of Science, Bangalore, India

Research Interests: Unmanned aerial vehicles, underwater vehicles, multi-robot systems, guidance and control, and human-robot interaction.

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#### Pankaj Jalote

Ph.D. (1985), Computer Science, the University of Illinois at Urbana Champaign, USA

Research Interests: Software Engineering, Software quality, process improvement, service oriented computing, software architecture, Fault-tolerant computing.

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Read more: http://www.iiitd.edu.in/~jalote/

#### Ponnurangam Kumaraguru

Ph.D. (2009), Computer Science, Carnegie Mellon University, USA

Research Interests: Privacy, e-Crime, Online Social Media, and Usable Security

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#### **Pushpendra Singh**

Ph.D. (2004), Inria-Rennes, Université de Rennes 1, France

Research Interests: Mobile Systems and Applications, Middleware, ICT for Development.

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#### **Pravesh Biyani**

Ph.D. (2012), Electrical Communication Engineering, Indian Institute of Technology Delhi, India

Research Interests: Optimisation for signal processing and communications, machine learning, and transportation.

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#### Pydi Ganga M. Bahubalindruni

Ph.D. (2014), Electrical and Computer Engineering,

Research Interests: Analog/Mixed signal design with emerging and submicron CMOS technologies, Largearea electronics, Transparent and Flexible circuits, device modeling and characterization.

Write to Ganga: bpganga@iiitd.ac.in Read more: https://www.iiitd.ac.in/pydi

#### **Rahul Purandare**

Ph.D. (2011), Computer Science, University of Nebraska - Lincoln, USA

Research Interests: Program Analysis, Software Security, Automatic Program Repair, Program Comprehension, Specification Mining, Wireless Sensor Networks.

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#### **Rajiv Raman**

Ph.D. (2007), Computer Science, University of Iowa, USA

Research Interests: Algorithms, Combinatorial Optimization, Graph Theory, discrete and computational geometry

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#### Rajiv Ratan Shah

Ph.D. (2017), National University of Singapore

Research Area: His main research interests focus on the multimodal analysis of user-generated content in the support of social media applications. Since his past research closely related to social media data, he started exploring characteristics of social networks in his current research. Currently, he is doing cross-platform social media analytics for event recommendation.

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#### Richa Singh

Ph.D. (2008), Computer Science, West Virginia University, USA

Research Interests: Pattern Recognition, Machine Learning, Biometrics and Medical Imaging

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#### **Saket Anand**

Ph.D. (2013), Electrical and Computer Engineering, Rutgers University, USA

Research Interests: Geometric Computer Vision, Semi-supervised learning, Robust methods, Scene

understanding

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#### Sanjit Krishnan Kaul

Ph.D. (2011), Electrical and Computer Engineering, Rutgers University, USA

Research Interests: Optimization of Wireless Networks, Enterprise 802.11 (WiFi) networks, Vehicular

Networks, Anomalous activity detection using mobile phones.

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#### **Sambuddho Chakravarty**

Ph.D. (2014), Computer Science, Columbia University, USA

Research Interests: Network Anonymity and Privacy, Network Surveillance and Anti-Censorship and

Network and Distributed Systems Security Write to Sambuddho: sambuddho@iiitd.ac.in Read more: http://www.iiitd.ac.in/sambuddho

#### **Samrith Ram**

Ph.D. (2012), Department of Mathematics, IIT Bombay Research Interests: Finite Fields and Combinatorics

Write to Samrith: samrith@iiitd.ac.in

Read More: https://sites.google.com/site/samrithram/

#### **Sarthok Sircar**

Ph.D. (2009) in Applied Mathematics from University of South Carolina

Research Interest: developing multiscale models and robust numerical algorithms for complex systems.

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#### **Shobha Sundar Ram**

Ph.D. (2009), Electrical Engineering, the University of Texas at Austin, USA

Research Interests: Electromagnetic sensor conceptualization, model and design, sensor circuit design and

signal processing algorithms

Write to Shobha: shobha@iiitd.ac.in

Read more: http://www.iiitd.edu.in/~shobha/

#### **Shriram Venkatraman**

Ph.D. (2017) in Anthropology from University College London

Research Interest: Technologies in work places, organizational culture, and entrepreneurship.

Write to Shriram: shriramv@iiitd.ac.in Read More: http://iiitd.ac.in/shriramv

#### **Sneh Saurabh**

Ph.D. (2012), Electrical Engineering, IIT, Delhi

Research Interests: Nanoelectronics, Exploratory Electronic Devices, Energy-Efficient Systems, VLSI Design

and Verification and CAD for VLSI Write to Sneh: sneh@iiitd.ac.in

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#### Sriram K.

Ph.D. (2004), Chemistry, Indian Institute of Technology Madras, India

Research Interests: Systems biology, Cell division cycle, Circadian rhythms, Computational cognitive neuroscience.

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#### **Subhadip Raychaudhuri**

Ph.D. (2002), Physics, University of Rochester, USA

Research Interests: (i) Systems biology of apoptotic cell death signaling in healthy and diseased cells and (ii) Immunobiology of B lymphocyte activation.

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#### Sujay Deb

Ph.D. (2012), Computer Science, Washington State University, USA

Research Interests: design of novel interconnect architectures for multicore chips

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#### **Sumit J Darak**

Ph.D. (2013), Nanyang Technological University (NTU), Singapore

Research Interests: Reconfigurable filter and filter banks for multi-standard wireless communication receivers, Dynamic Spectrum Learning, Tunable Bandwidth Access and RF Harvesting in Green Cognitive Radios.

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#### **Tanmoy Chakraborty**

Ph.D. (2015), IIT Kharagpur, India

Research Interests: Network Science, Data Mining, and Data-driven cyber security

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#### **Taypritesh Sethi**

Ph.D. (2013), CSIR-IGIB.

Research Interests: Big -data for clinical decision support, machine learning for critical care and

community medicine, human physiology Write to Tavpritesh: Tavpritesh@iiitd.ac.in Read more: https://www.iiitd.ac.in/tavpritesh

#### Venkata Ratnadeep Suri

Ph.D. (2013), Indiana University, Bloomington, Indiana

Research Interests: ICTs and Society, Information Literacy, Data Literacy, E-Health, M-health, Social media for Health, ICTs and Health behavior, ICTs and Development.

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#### Vibhor Kumar

Ph.D. (2007) from Helsinki University of Technology (now Aalto),

Research Interest: Genomics, Computational Biology, and Statistical Signal processing.

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#### Vikram Goyal

Ph.D. (2009), Computer Science and Engineering, Indian Institute of Technology Delhi, India

Research Interests: Data Mining, Databases, Spatial Data Analytics

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#### Vinayak Naik

Ph.D. (2006), Computer Science and Engineering, Ohio State University, USA

Research Interests: Mobile Computing, Sensor Networks, Wireless Networks, and Systems.

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#### **Vivek Bohara**

Ph.D.(2011), Electrical and Electronic Engineering, Nanyang Technological University, Singapore

Research Interests: Cognitive Radio, Cooperative wireless communication, and Digital Predistortion

Techniques.

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#### **Vivek Kumar**

Ph.D. (2014), Research School of Computer Science, Australian National University

Research Interest: Parallel programming models and runtime systems.

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### **Visiting Faculty**

#### **Akshay Kumar**

Ph.D. (2014), University of Delhi, Senior Research Fellow Indian Council of Medical Research Consultant Psychologist BLK Super Speciality Hospital, Franchise owner of "Men are from Mars, Women are from Venus" Asia Pacific region

#### **Amrit Srinivasan**

Ph.D., University of Cambridge, UK

Recipient of the Commonwealth Scholarship Award, the Shastri Indo Canadian Fellowship Award, the Charles Wallace India Trust Award and the ICCR's Visiting Chair in Humanities & Social Sciences Award

#### Ashok K. Mittal

Vice-president, Quality Circle Forum of India

Retired Professor & Dean (R&D, PRG) IIT Kanpur Operations Research/ Management; Intellectual Property

#### **Bijoy Chand Chatterjee**

Ph.D. (2014), Department of Computer Science & Engineering, Tezpur University

Routing and spectrum allocation in optical networks, QoS-aware schemes, resource allocation in Hadoop, and cross-layer design

#### G.S. Visweswaran

Retired Professor from IIT-Delhi

CAD of VLSI, Design of Digital, Analog and Mixed Signal VLSI Circuits

#### **Hemant Kumar**

Founder - Softek Ltd., VP at HCL Tech. B.Tech.(1977), IIT Kanpur

Software Development, Compilers, Databases, Inventory Management and Banking Software [Since June 2011]

#### **Indrani De Parker**

Ph.D. (per.), Design Education in 21st Century India, IIT, Mumbai

Indrani De Parker is an alumnus of the National Institute of Design (NID), Ahmedabad. She is a communication designer and design educator.

#### **Jyoti Sinha**

Co-founder and CTO at Omnipresent Robot Tech. MS (Computer Science) from Technical University of Munich (TUM), Germany/ University of California Berkeley (UCB), USA

Multi-robot communication, Robotic coordination, and scheduling, ad hoc wireless networks, smart Medium access protocols

#### K M Pathi

Research interests: Behavior Change Communication, Communication Ethics.

An alumnus of Delhi University, visiting faculty to National Centre for Good Governance (Delhi), Central Training Establishment, Air India, (Hyderabad). Also an empanelled training faculty with Larson & Toubro, Tamilnadu Salt Corporation.

#### Manohar Khushalani

Bachelor in Civil Engineering from BITS Pilani Courses on 3D Modelling and Finite Element analysis from IIT, Delhi

Former Director, Environment, and Sociology, at the National Water Academy, Khadakwasla, & Member Secretary, National Environmental Monitoring Committee for River Valley Projects

#### Pankaj Vajpayee

President Value Research India (P) Ltd. MBA (Finance) - University of Delhi; 1993 B.Tech. - IIT Delhi - 1990 Has over 24 years of corporate experience primarily in the field of investment banking and portfolio investment advisory activities.

#### **Priyank Narayan**

A Certified Axiometrix Assessor on Thinking Pattern Profile by Hartman Institute, USA, Priyank is also a Quality Six Sigma Green Belt.

He heads the Centre for Entrepreneurship at the Ashoka University

#### Raj Ayyar

Full-time Assistant Professor, East Florida State University

Adjunct Faculty, West Valley College and Laney College MA (Philosophy), St. Stephen's College, Delhi MA (Philosophy), Southern Illinois University, USA

#### Samaresh Chatterji

Ph.D. (1979), Mathematics, Wayne State University, Detroit

Former Dean - Academic Programs, DA-IICT, Gandhinagar Abstract Algebra, Graph Theory [Since Jan 2013]

#### Srikanth Saripalli

Ph.D. (2007), University of Southern California

Srikanth Saripalli is a Roboticist with research interests in unmanned systems in general and aerial vehicles in particular.

#### **Sumit Mediratta**

Ph.D. from University of Southern California (USC), Los Angeles

At USC ISI, he made strong contributions in the advanced computer architecture applied research. At NVIDIA Graphics, he was involved in the development of cutting edge Media and Communications Processors, and Graphics Processing Units (GPUs)

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# **Administrative Officers**

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Chahan Rashikbhai Katara

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Harshi Gupta

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Kapil Chawla

Khagendra Joshi

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Nidhi Yadav

Nisha Narwal

Pallavi Kaushik

Pooja Sagar

Prachi Mukherjee

Priti Patel

Rahul Gupta

Rahul Verma

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Rashmil Mishra

Ravi Bhasin

Sana Ali Naqvi

Sanjay Roy

Sheetu Ahuja

Shipra Jain

Umesh

Vinod Kumar

Yogesh Sangwan



# **Appendices**

# **Appendix A : Publications**

# **Journal Published**

#### Dr. Angshul Majumdar

- 1. N. Kohli, M. Vatsa, R. Singh, A. Noore and A. Majumdar, "Hierarchical Representation Learning for Kinship Verification", IEEE Transactions on Image Processing, Vol. 26 (1), pp. 289-302. (I.F. 3.7)
- 2. S. Tariyal, A. Majumdar, R. Singh and M. Vatsa, "Deep Dictionary Learning", IEEE ACCESS, Vol. 4, pp. 10096 10109, 2016. (I. F. 1.3).
- 3. A. Majumdar, A. Gogna and R. K. Ward, "Semi-supervised Stacked Label Consistent Autoencoder for Reconstruction and Analysis of Biomedical Signals", IEEE Transactions on Biomedical Engineering, Vol. PP (99), 10 pages (I. F. 2.5).
- 4. J. Mehta and A. Majumdar, "RODEO: Robust DE-aliasing autoencOder for Real-time Medical Image Reconstruction", Pattern Recognition, Vol. 63, pp. 499-510, (I.F. 3.3).
- 5. A. Gogna and A. Majumdar, "DiABIO: Optimization based design for improving diversity in recommender system", Information Sciences, Vol. 378, pp. 59-74, 2017 (I.F. 3.3).
- 6. M. Gulati, S. S. Ram, A. Majumdar and A. Singh, "Single Point Conducted EMI Sensor With Intelligent Inference for Detecting IT Appliances", IEEE Transactions on Smart Grid, Vol. pp (99), 11 pages (I.F. 3.2).
- 7. I. Manjani, S. Tariyal, M. Vatsa, R. Singh, A. Majumdar, "Detecting Silicone Mask based Presentation Attack via Deep Dictionary Learning," IEEE Transactions on Information Forensics and Security, Vol. 12 (7), pp. 1713-1723, 2017 (I.F. 2.4).
- 8. V. Singal and A. Majumdar, "Majorization Minimization Technique for Optimally Solving Deep Dictionary Learning", Neural Processing Letters, pp. 1-16, 2017, (I.F. 1.7).
- 9. A. Majumdar, "Causal MRI Reconstruction via Kalman Prediction and Compressed Sensing Correction", Magnetic Resonance Imaging, Vol. 39, pp. 64-70, 2017 (I.F. 2.0).
- 10. A. Sankaran, M. Vatsa, R. Singh and A. Majumdar, "Group Sparse Autoencoder", Image and Vision Computing, Vol. 60, pp. 64-74, 2017 (I.F. 1.7).

#### Dr. Anubha Gupta

- 1. P. Aggarwal and A. Gupta, "Accelerated fMRI reconstruction using Matrix Completion with Sparse Recovery via Split Bregman," Elsevier Neurocomputing, vol. 216, pp. 319-330, December 2016, (No. of pages:12, I.F. 2.392)
- 2. N. Ansari, A. Gupta, and A. S. Gupta, "Shallow water acoustic channel estimation using two-dimensional frequency characterization," Journal of the Acoustical Society of America (JASA), vol. 140, no.5, pp. 3995-4009, Nov. 2016, (No. of pages:15, IF=1.572, IF=3.142), Doi: <a href="http://dx.doi.org/10.1121/1.4967448">http://dx.doi.org/10.1121/1.4967448</a>. This is the one of the best journals in underwater communication and is comparable to IEEE Journal of Ocean Engineering with I.F. 1.648.
- 3. S. Sharma, V. Bhatia, and A. Gupta, "A New Sparse Signal-Matched Measurement Matrix for Compressive Sensing in UWB Communication," IEEE Access, vol. 4, pp. 5327-5342, 2016, (No. of pages:16, I.F. 1.270).
- 4. S. Sharma, V. Bhatia, and A. Gupta, "Sparsity-based narrowband interference mitigation in ultra wideband communication for 5G and beyond", Computers & Electrical Engineering, Elsevier, pp. 1-13, ISSN 0045-7906, 2017, (No. of pages:13, IF=1.084), https://doi.org/10.1016/j.compeleceng.2016.12.02.

5. P. Aggarwal, P. Shrivastava, T. Kabra, and A. Gupta, "Optshrink LR+S: Accelerated fMRI Reconstruction using Non-Convex Optimal Singular Value Shrinkage", Brain Informatics, pp. 1-19, January 2017, (no. of pages: 19).

#### Dr. Anuradha Sharma

- 1. A. Sharma and T. Kaur, On cyclic Fq-linear Fqt-codes, International Journal of Information and Coding Theory (2016) [28 pages]. (I. F. 1.10).
- 2. A. Sharma & T. Kaur, Enumeration formulae for self-dual, self-orthogonal and complementary-dual quasi-cyclic codes over finite fields, Cryptography and Communications, DOI 10.1007/s12095-017-0228-7 (2017). [37 pages] (I. F 1.03).
- 3. T. Kaur and A. Sharma, Constacyclic additive codes over finite fields, Discrete Mathematics, Algorithms and Applications 9(3), 2017 [35 pages]. (I. F. 0.39).

# Dr. Chetan Arora

- 1. S. Singh, C. Arora, and C.V. Jawahar: Trajectory Aligned Features For First Person Action Recognition. Pattern Recognition, February 2017.
- 2. T. Halperin, Y.Poleg, C. Arora, and S. Peleg: EgoSampling: Wide View Hyperlapse from Single and Multiple Egocentric Videos. IEEE Transactions on Circuits and Systems for Video Technology, January 2017.

# Dr. Debjyoti Bera

1. S. Dawar, V. Goyal and D. Bera. A hybrid framework for mining high-utility itemsets in a sparse transaction database, Applied Intelligence, (Pages1 – 19)(IF: 1.22).

#### Dr. Debarka Sengupta

- 1. H. Li, E. Courtois, D. Sengupta, "Reference component analysis of single-cell transcriptomes elucidates cellular heterogeneity in human colorectal tumors." Nature Genetics 49, (Pages 708–718) (2017).
- 2. D. Sinha, D. Sengupta, and S. Bandyopadhyay, "ParSel: Parallel Selection of Micro-RNAs for Survival Classification in Cancers." Molecular Informatics, (I. F. 1.6)

#### Dr. Donghoon Chang

- 1. D. Chang, A. Kumar, S. K. Sanadhya, "Distinguishers for 4-branch and 8-branch Generalized Feistel Network", IEEE Access (SCI-E), to be appeared. Pages: 11, (I. F.: 1.270).
- 2. T. K. Bansal, D. Chang, S. K. Sanadhya, "Sponge based CCA2 secure asymmetric encryption for arbitrary length message", International Journal of Advanced Computer Technology (IJACT) special issue, to be appeared. Pages:26, (I. F. 2.798).
- 3. M. Agrawal, D. Chang, S. K. Sanadhya, "A New Authenticated Encryption Technique for Handling Long Ciphertexts in Memory Constrained Devices", International Journal of Advanced Computer Technology (IJACT), Pages:26, (I. F.: 2.798)
- 4. D. Chang, S. K. Sanadhya, M. Singh. "Security Analysis of mvHash-B Similarity Hashing", Journal of Digital Forensics, Security and Law (JDFSL), Vol. 11 (2), 2016. Pages: 14.

5. M. Agrawal, T. K. Bansal, D. Chang, A. K. Chauhan, S. Hong, J. Kang and S. K. Sanadhya, "RCB: Leakage-Resilient Authenticated Encryption via Re-keying", Journal of Supercomputing (ISSN: 1573-0484). (SCI), to be appeared. Pages:1–26, Impact Factor: 0.858.

# Dr. Ganesh Bagler

- 1. S Pathania, G. Bagler, P.S. Ahuja, "Differential network analysis reveals evolutionary complexity in secondary metabolism of R. serpentina over C. roseus", Frontiers in Plant Science, 7, 1229 (2016). 17 pages + Supplementary Data (IF: 4.495)
- 2. R Badhwar and G. Bagler, "A distance constrained synaptic plasticity model of C. elegans neuronal network", Physica A, 469, 313-322 (2017). 10 pages + Supplementary Data (IF: 1.785)
- 3. V Ravindran, V. Sunitha and G. Bagler, "Identification of critical regulatory genes in cancer signaling network using controllability analysis", Physica A, 474, 134-143 (2017). 10 pages + Supplementary Data (IF: 1.785).

# Dr. Ganga Mamba

- 1. Pydi Ganga Bahubalindruni, Pedro Barquinha, Vitor Tavares, Rodrigo Martins, Elvira Fortunato, "A Low-Power Analog Adder and Driver Using a-IGZO TFTs," in IEEE Transactions on Circuits and Systems I: Regular Papers, Jan.2017, vol. PP, no.99, pp.1-8. (I. F. 2.393)
- 2. Samanta S, Tiwari B, Bahubalindruni PG, Barquinha P, Goes J. Threshold voltage extraction techniques adaptable from sub-micron CMOS to large-area oxide TFT technologies. International Journal of Circuit Theory and Applications. 2017 Jan (I. F. 1.179).

#### Dr. Mayank Vatsa

- 1. N. Kohli, M. Vatsa, R. Singh, A. Noore, and A. Majumdar, Hierarchical Representation Learning for Kinship Verification, IEEE Transactions on Image Processing, Vol. 26, no. 1, pp. 289-302, January 2017 (I. F.3.375).
- 2. A. Sankaran, G. Goswami, M. Vatsa, R. Singh, and A. Majumdar, Class Sparsity Signature based Restricted Boltzmann Machines, Pattern Recognition (Elsevier) Special Issue on Deep Image and Video Understanding, Vol. 61, pp. 674-685, 2017 (I.F. 3.399).
- 3. A. Sankaran, A. Jain, T. Vashisth, M. Vatsa, and R. Singh, Adaptive Latent Fingerprint Segmentation using Feature Selection and Random Decision Forest Classification, Information fusion, Volume 34, Pages 1-15, March 2017 (I.F.4.353).
- 4. P. Mittal, A. Jain, G. Goswami, M. Vatsa, and R. Singh, Composite Sketch Recognition using Saliency and Attribute Feedback, Information Fusion, Vol. 33, Pages 86-99, January 2017 (I.F. 4.353).
- 5. S. Tariyal, A. Majumdar, M. Vatsa, and R. Singh, Deep Dictionary Learning, IEEE Access, Vol. 4, 2016 (I.F.1.270).
- 6. A. Bharati, R. Singh, Member, M. Vatsa, K. Bowyer, Detecting Facial Retouching Using Supervised Deep Learning, IEEE Transactions on Information Forensics and Security, Vol. 11, No. 9, pp. 1903-1913, September 2016 (I.F. 2.441).

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- 9. S. Ghosh, A. Chowdhury, M. Vatsa, R. Singh, RGB-D Face Recognition via Learning-based Reconstruction, IEEE International Conference on Biometrics: Theory, Applications and Systems, 2016 Received the Best Poster Award.
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# Dr. Sanjit Kaul

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# Dr. Shobha Sundar Ram

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#### Dr. Sujay Deb

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# Dr. Sumit Darak

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# Dr. Vinayak Naik

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- 2. D. Anwar, V. Naik, A. Gupta, and S. K. Sharma. Detecting Meditation using a Dry Mono-Electrode EEG Sensor, at Networked Healthcare Technology (NetHealth'17) Workshop held in conjunction with the 9th International Conference on Communication and Networks (COMSNETS'17), Bangalore, India, Jan 4-8 2017, 6 pages.
- 3. S. Soubam, M. Agarwal, and V, Naik. Using an Arduino and a Smartwatch to Measure Liquid Consumed From Any Container, at Workshop on Wild and Crazy Ideas on the interplay between IoT and Big Data

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4. M. Vij, V. M. V. Gunturi, and V. Naik. Use of ECDF-based Features and Ensemble of Classifiers to Accurately Detect Mobility Activities of People using Accelerometers, at The 9<sup>th</sup> International Conference on Communication and Networks (COMSNETS'17), Bangalore, India, Jan 4-8 2017, 8 pages.

#### Dr. Vivek Bohara

- 1. M. Gulati, V. Singh, S. Agarwal and V. A. Bohara, "Appliance Activity Recognition Using Radio Frequency Interference Emissions," IEEE Sensors Journal, vol. 16, no. 16, pp. 6197-6204, June, 2016.
- 2. N. Gupta and V. A. Bohara, "An Adaptive Subcarrier Sharing Scheme for OFDM based Cooperative Cognitive Radios", IEEE Transactions on Cognitive Communications and Networking, vol. 2, no. 4, pp. 370–380, Dec. 2016.
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# **Workshop Paper Published**

#### Dr. Anubha Gupta

1. M. Dahiya, R. Duggal, A. Gupta, and R. Gupta, "Stain Color Normalization of Microscopic Images of Multiple Myeloma," Poster, Multiple Myeloma-State of the Art, PGIMER, Chandigarh, India, September 2016.

#### Dr. Ponnurangam Kumaraguru

1. S. Gupta, P. Gupta, M. Ahamad, and P. Kumaraguru, Exploiting Phone Numbers and Cross-Application Features in Targeted Mobile Attacks. Workshop on Security and Privacy in Smartphones and Mobile Devices (SPSM), 2016. Conference. 10 pages.

# Dr. Pravesh Biyani

- 2. D. Kimothi, A. Soni, P. Biyani and J. Hogan, Distributed Representations for Biological Sequence Analysis, DTMBIO 2016.
- 2. D. Kimothi, A. Shukla, P. Biyani, S. Anand and J. Hogan, Metric Learning on Biological Sequence Embeddings, IEEE 18th International Workshop on SPAWC.

# Dr. Vivek Kumar

1. M. Grossman, V. Kumar, Z. Budimlic, and V. Sarkar. Integrating Asynchronous Task Parallelism with OpenSHEM. In Proceedings of the 3rd Workshop on OpenSHMEM and Related Technologies (OpenSHMEM 2016). Springer, pages 3-17.

# **Book/ Book Chapters Published**

# Dr. Mayank Vatsa

1. I. Nigam, M. Vatsa, and R. Singh, Ophthalmic Disorder Menagerie and Iris Recognition, Handbook of Iris Recognition, Second Edition, Edited by Kevin W. Bowyer and Mark Burge, Springer, 2016.

# Dr. Pushpendra Singh

1. P. Singh. Mobile + Cloud: Opportunities and Challenges. Mobile Application Development, Usability, and Security. Pages 260-279. IGI Global, 2016 (Book Chapter).

#### Dr. Richa Singh

1. I. Nigam, M. Vatsa, and R. Singh, Ophthalmic Disorder Menagerie and Iris Recognition, Handbook of Iris Recognition, Second Edition, Edited by Kevin W. Bowyer and Mark Burge, Springer, 2016.

# Dr. Shobha Sundar Ram

1. S. S. Ram, S. Z. Gurbuz, and V. C. Chen, "Modeling and Simulation of Human Motions for Micro-Doppler Signatures" (book chapter), Radar for Indoor Monitoring, edited by Dr. M. G. Amin, published by CRC Press.

# Dr. Sneh Saurabh

1. S. Saurabh and M. J. Kumar, Fundamentals of Tunnel Field Effect Transistors, CRC Press (Taylor & Francis), ISBN 9781498767132, 292 Pages - 110 B/W Illustrations, Nov. 2016

#### Dr. Sumit Darak

1. S. J. Darak, A. Nafkha, C. Moy and J. Palicot, "Is Bayesian Multi-armed Bandit Algorithm Superior?: Proof-of-Concept for Opportunistic Spectrum Access in Decentralized Networks," in Cognitive Radio Oriented Wireless Networks, D. Noguet, K. Moessner and J. Palicot, Ed. Springer International Publishing, June 2016, pp. 104-115.

# Dr. Tavpritesh Sethi

1. T. Sethi, Big Data to Big Knowledge for Next Generation Medicine: A Data Science Roadmap. Springer International Publishing AG 2018 S. Srinivasan (ed.), Guide to Big Data Applications, Studies in Big Data 26.

# **Appendix B: Technologies & Tools Developed and Deployed**

#### Dr. Alexander Fell

1. Developed a low power to monitor micro climate in a specific area in the long term for the Wildlife Institute of India (WII). Testing of the device will to commence shortly.

#### Dr. Donghoon Chang

1U2F/UAF development for the actual products of a Korean company, IRISYS. (Our U2F/UAF development has been certified by FIDO.)

#### Dr. Ponnurangam Kumaraguru

- 1) **DRDO Tool**: Developed a solution that will help DRDO to understand How, What, When, and Where of the DRDO employees are talking about and what is being talked about DRDO. We have installed this at the CAIR DRDO Bengaluru lab this year. Last year we installed it at the DRDO HQ. In both the installations, scientists have used it and given good feedback. This system will have only these 2 installations
- 2) **Bugle News**: We built an RSS aggregator service called Bugle News that fetches RSS feeds from news organizations including BBC, CNN, and Reuters, and provides users with corresponding headlines. We built this system on the Freebasics platform. The news stories are organized by topic and country. Users using Bugle News would see these news snippets aggregated from different sources, categorized into eight high level topics (World News, Africa, Asia, America, Science, Sports, Movies&Entertainment and Jobs&Career). There were additional lower level topics for nine countries: South Africa, Zambia and Nigeria within Africa; Philippines, Bangladesh and Pakistan within Asia; and Colombia, Peru and Mexico within America; and two specific sports: Cricket and Football within Sports. The service was offered in English between September 17<sup>th</sup> and December 15, 2016 and has been available in English, French and Spanish since December 16, 2016. In total, we have had 100,000+ unique visitors to Bugle News until 31st March 2017. On average, we get 1,400 hits on the Bugle news everyday. Society
- 3) **Awaaz: My Voice**: An application built on the Freebasics platform which helps in getting citizens to mark their complaints to be raised to the Government. Currently deployed in Africa. Awaaz receives 320+ active users accessing the service everyday. Society.
- 4) **AASMA:** Advanced Application for Social Media Analytics. Fully developed at IIITD. Requested by 75+ state and federal government agencies in India. Deployed in 40+ organisations. Complete system is 650,000+ lines of code and our native code is 34,000+ lines. We added 15+ installations in the period of evaluation (1 May 2016 30 April 2017). Government
- Government of India has officially declared this project as STRATEGIC in nature and is closely monitoring the growth of the same.
- AASMA has been discussed at the Secretary / Minister level, there were multiple opportunities this year to showcase the tool to this body / level of stakeholders.
- Some agencies have also given formal feedback in writing that the tool is very useful to them and they are using it for their internal purposes.

# Dr. Sanjit Kaul

\_1. Actively involved in developing an autonomous last-mile connectivity solution with others at IIIT-Delhi. The team is also a part of the Mahindra Rise Challenge. Please note that this is far from the deployment stage.

# Dr. Shubhadip

1. A computational tool (combining kinetic Monte Carlo model and data analysis) is being developed that can be help develop precision/personalized strategies (optimal strategies) in cancer therapy and for cancer subtype classifications. Kinetic Monte Carlo simulations elucidate biology of cancer cells at the level of single cells and thus capture single cell stochastic fluctuations. Earlier work elucidated mechanisms for chemo resistance generation in cancer cells (resistance generation has been a crucial barrier to developing effective cancer therapy). Current effort is focused on developing a detailed computational model for affinity variant BH3 mimetic ligands (we are not aware of any such previous efforts in India).

# Dr. Tavpritesh Sethi

1. SAFE-ICU initiative at AIIMS Department of Pediatrics. Supported by the Wellcome Trust/DBT India Alliance. It is observed that commercial applications for warehousing medical Big-data from the ICU costs ~ INR 2 Lakh per bed, per annum. We launched our in-house developed digital-medicine framework for Intensive Care Units as the SAFE-ICU initiative (Sepsis Advanced Forecasting Engine) at All India Institute of Medical Sciences, New Delhi. It is an affordable & integrated warehouse of high-resolution Big-data from Pediatric ICU for a developing nation settings. The lean prototyping strategy allowed us to test the feasibility of constructing an affordable Big-data warehouse for Intensive Care Units. About 75,000 patient-hours of continuous monitoring data have been warehoused from the PICU using our pipelines developed with open-source technologies. This technology is currently being used primarily for research purposes and the commercial potential of this technology shall be explored and exploited.

# **Appendix C: Patents**

Details:

I. Application No. 201611028804

Date for filing: 24/08/2016

Title: Cuff-less Blood Pressure Estimation Solution Using Electrocardiogram and Photoplethysmogram

Inventors: Monika Jain, A V Subramanyam, Sujay Deb and Angshul Majumdar.

Status: Filed/ Granted: Filed

II. Application No. 201711028803

Date for filing: 24/08/2016

Title: Smartphone Based Health Monitoring Using the Inbuilt Camera

Inventors: Monika Jain, Sujay Deb and Angshul Majumdar.

Status: Filed/ Granted: Filed

III. Application No.: 201711013219

Date of filing: 13.04.2017

Title: ESCORT BOT SYSTEM AND METHOD

Investors: Pushpendra Singh, Shubham Sinha; Kartik Maji; Taruvar Aggarwal

Status: Filed

IV. Application No.: 201611031953.

Date of filing: 20.09.2016

Title: System and Method for Minimal Residual Disease (MRD) Detection in Acute Lymphoblastic

Leukemia

Investors: Dr. Anubha Gupta, Dr. Ritu Gupta, Naushad Ansar

Status: Filed

# **Appendix D: SRPs**

# **Projects sanctioned this year**

SI No	Title of the Project	Name of the PI	Funding Agencies	Total Sanction Amount Rs.
1	Low cost high resolution cadastral map generation using UAV (Phase-1)	Dr.P B Sujit	PEC University of Technology	12.75
2	Algorithmic 3D Modelling and Virtual Spatial interaction	Dr.Ojaswa Sharma	DST-SERB	27.22
3	Vision Based Landing of a Quadrotor	Dr.P B Sujit & Dr.Mayank	ARDB-DRDO	10.08
4	Efficient Algorithms for Inference in Higher Order MRF-MAP Problems	Dr.Chetan Arora	DST-SERB	23.29
5	Ramanujan Fellowship	Dr.Saswata Shannigrahi	DST-SERB	14.99
6	Investagating Scalable Algorithms for Some Macro Level Transportation Problems on Graph Based Represantation of Road Networks	Dr.Venkata Maruti Gunturi	DST-SERB	16.28
7	Advance Driver assistance System	Dr.Chetan Arora	IIT Delhi/Joint Project	8.76
8	MSR- Unristricted Research Grant Air Pollution	Dr. Vinayak Naik	Microsoft	1.56
9	J.C. Bose Fellowship Award	Dr. G.P.S. Raghava	SERB	
10	NPTEL MOOC Courses- Mobile Computing	Dr. Pushpendra Singh	NPTEL	3.95

11	Frontal Radar Imaging of Humans Behind Walls	Shobha Sundaram	AFRL	39.48
13	ExRe: Examining and Enabling Resilience for Internet Vulnerabilities of Large Organisations using Network Cartography	Dr. Sambuddho Chakravarty	Persistant Systems Pvt Ltd	44.00
14	Investigation of Tunnel Field-Effect Transistors for Energy Efficient Circuits	Dr. Sneh Saurabh	DST-SERB	41.73
15	An Yang Project	Dr. Donghoon Chang	Anyang	3.78
16	Performance Improvement in Indoor Visible Light Communication (VLC) system using MIMO-OFDM Based Techniques	Dr. Anand Srivastava	DST	6.30
17	Anyang Korean Project - 2	Dr. Donghoon Chang	Anyang	3.98
18	Course Fees of Dr. P.K	Dr. PK	Google	0.20
19	M.Tech. in Computational Biology	Centre Fund	DBT	269.20
20	Artificial Intelligence	Centre Fund	Infosys	800.00
	Total			1327.57

# **Total Running Projects**

SI No	Title of the Project	Name of the PI	Funding Agencies	Total Sanction Amount Rs.
1	Low cost high resolution cadastral map generation using UAV (Phase-1)	Dr.P B Sujit	PEC University of Technology	12.70
2	Algorithmic 3D Modelling and Virtual Spatial interaction	Dr.Ojaswa Sharma	DST-SERB	27.21
3	Vision Based Landing of a Quadrotor	Dr.P B Sujit & Dr.Mayank	ARDB-DRDO	10.07
4	Efficient Algorithms for Inference in Higher Order MRF-MAP Problems	Dr.Chetan Arora	DST-SERB	23.28
5	Advance Driver assistance System	Dr.Chetan Arora	IIT Delhi/Joint Project	8.76
6	MSR- Unristricted Research Grant Air Pollution	Dr. Vinayak Naik	Microsoft	1.56
7	J.C. Bose Fellowship Award	Dr. G.P.S. Raghava	SERB	
8	NPTEL MOOC Courses- Mobile Computing	Dr. Pushpendra Singh	NPTEL	3.95
9	Frontal Radar Imaging of Humans Behind Walls	Shobha Sundaram	AFRL	39.48

10	ExRe: Examining and Enabling Resilience for Internet Vulnerabilities of Large Organisations using Network Cartography	Dr. Sambuddho Chakravarty	Persistent Systems Pvt Ltd	44.00
11	Investigation of Tunnel Field- Effect Transistors for Energy Efficient Circuits	Dr. Sneh Saurabh	DST-SERB	41.73
12	An Yang Project	Dr. Donghoon Chang	Anyang	3.78
13	Performance Improvement in Indoor Visible Light Communication (VLC) system using MIMO-OFDM Based Techniques	Dr. Anand Srivastava	DST	6.30
14	Anyang Korean Project - 2	Dr. Donghoon Chang	Anyang	3.98
15	Course Fees of Dr. P.K	Dr. PK	Google	0.20
16	M.Tech. in Computational Biology	Centre Fund	DBT	269.20
17	Artificial Intelligence	Centre Fund	Infosys	800.00
18	Mobile-based Diagnosis of Sleep Apnea	Dr.Vinayak Naik	DST-SERB	51.01
19	Google Award for School	Prof.Pankaj Jalote	Google	9.50

20	Green Communication Technology for Multi Standard and Multi-band transceivers	Dr.Vivek Bohra	UGC	12.39
21	DST Inspire	Dr.Sumit Darak	DST	35.00
22	Preventing & Treating HIV Comorbidities in India: Multi- Tiered Strategy For Women	Dr.Mona Duggal/ Dr.Puspendra	Yale University	11.47
23	Formulation of Modelling Strategy Of SSPL GAN-HEMT based on Non -Linear measurement data	Dr.Mohammad S Hashmi	CARS: DRDO	9.60
24	E- Rickshaw Swarath	Dr. Sanjit		
25	Joint Research between EMC & IIITD	Dr.P K	EMC Data Storage System India Pvt. Ltd	9.60
26	Mechanism, Impact and Scenario Analysis	Dr.P K	CARS: DRDO	9.00
27	ISEA Project Phase-II	Dr.P K	CDAC	36.06
28	Integrating open sources intelligence from traditional sources and online social networks for Intelligence gathering	Dr.P K	DeitY	168.70
29	SRP-Irisys Company Ltd	Dr.Donghoon Chang	Irisys Company Ltd	5.74

30	Nokia Lokalization	Dr.Vinayak Naik	NOKIA	11.52
31	Nokia Health	Dr.Vinayak Naik	NOKIA	6.31
32	IBM India	Dr.Mayank Vatsa	IBM	0.90
33	UAV	Mr. Parikshit		
34	Using Online Social Media for Intelligence Gathering	Dr. P K	MHA (IB)	6.36
35	Infosys Centre		CAI	800.00
36	Research on Multimodal Context Switching Using Multispectral Face, Periocular and Iris Recognition at a Distance	Dr.Mayank Vatsa	DeitY	120.55
37	Small Cell WiFi Networks For The Enterprise	Dr.Sanjit Kaul	DeitY	88.34
38	Design Innovation Centre	Prof.Pankaj Jalote	MHRD-IITD	130.00
39	Design and Development of Leukoanalyzer, an Automated Computer Assisted Tool for Minimal Residual Disease Estimation (MRD) in B-lineage Acute Lymphoblastic Leukemia(ALL) using Image Processing Techniques.	Dr.Anubha Gupta	DeitY	28.31

40	Design and development of Digital Multimedia Forgery Detection system	Dr. A.V. Subramanyam	DeitY	49.80
41	A low cost and easy to use cuff- less blood pressure measuring device using pulse transit time and preejection period	Dr.Sujay Deb	INDO-US S&T (DST)	40.94
42	Creating Course Content for Privacy and Security in Online Social Media	Dr.PK	Intel Corporation	12.19
43	Prime Minister Fellowship	Mr. Venkatesh Vinayak Rao	CII	
44	EMC: Development of distributed algorithms for incremental Sensing Communication	Dr.Amarjeet Singh	EMC Data Storage System India Pvt. Ltd	0.96
45	Human Sense: Towards contex aware sensing,inference and actuation for applications in Energy and Healthcare	Dr.Pushpendra Singh	Media Lab Asia	184.41
46	StanFord University	Dr.Pushpendra Singh	Stanford University	7.91
47	Smartphone-Based Anomalous Human Activity Detection & Prediction	Dr.Sanjit Kaul	DST-SERB	19.84
48	DST/INSPIRE Faculty Award/2013	Dr.Shobha Sundar Ram	DST	35.00
49	Dynamical Analysis on the Functional relationship between circadian rhythms & memory formation to understand post-traumatic memories in human	Dr.Sriram K	DST	15.89

50	Smart Electrical Energy Disaggregation using machine learning Approaches.	Dr.Amarjeet Singh	TCIL	2.50
51	Programmable System for Monitoring of Electrical Parameters and Intelligent Control of Electrical Appliances	Dr.Amarjeet Singh	TCIL	2.50
52	Adobe Award	Dr.Ponnurangam Kumaraguru	Adobe	5.00
53	VOX-Fp&POL-Violent Online Political Extremism "Networking of Researchers for a High Level Multi-Organisational & Cross- Border Collaboration – Network of Excellence"	Dr.PK	UK	3.63
54	DST/INSPIRE Faculty Award/2012	Dr.Angshul Majumder	DST	35.00
55	DST/INSPIRE Faculty Award/2012	Dr.Pravesh Biyani	DST	35.00
56	DST/INSPIRE Faculty Award/2012	Dr.Sujay Deb	DST	35.00
57	An Inter-Disciplinary Approach Toward building Ontology for Online Extremism	Dr.Ponnurangam Kumaraguru	DST-Indo- Ireland	6.84
58	Research and Exploration in Support of the proposed Project Title Use of cell phone for detecting and Controlling Infectious Diseases from National Geographic Society	Dr.Vinayak Naik	National Geographic Society	9.86

International Development Research Centre, Canada and Privacy International, UKPrivacy In India.	20.55
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335.827

# **Consultancies in year 16-17**

S. No	Project Title	PI	Funding Agency	Sanction Amount
1		Dr.Mohammad Hashmi	Savita Telecom Services	
	Technical consultancy for Savita Telecom Services			1.50
2	Technical consultancy for development of image tracking on live video using Homography	Dr.Chetan Arora	Beehives systems	
	Techniques			0.50
3	Estimating 6-DOF Camera Pose for	Dr.Chetan Arora	Beehives systems	
	Augmented Reality Applications			12.00
4		Dr.Chetan Arora	Staq Technology	
	Deep Learning Technologies for Enhancing Fashion Recommendation.			1.05
5	Army Training	Dr.PK	МНА	
6	IEEE Biometrics Council - Website	Dr.Richa Singh	IEEE	
	and Social Media Pages			0.98

7	IEEE Biometrics Council - Newsletter Design	Dr.Mayank Vatsa	IEEE	5.31
8	OSM Training	Dr. Ponnurangam Kumaraguru	МНА	1.80
9	WSSEE	Dr. Somitra Sanadhya	WESSEE	6.80
10	Assistance in Hardware Davelonment	Dr.Alexandre Fell	Exit 10 Marketing	
	Assistance in Hardware Development & Design			1.50
11		Dr.Chetan Arora	Staq Technology	
	Artificial intelligence technology for enhancing Fashion Recommendation			10.00
12	Identify food pairing opportunities	Dr. Ganesh Bagler	Unilever Pvt. Ltd	
	for tea			4.26
13		Dr. Angshul Majumdar	TCS	
	Advisory Engagement for Machine Learning			7.00
14	Yatra Online	Dr. Pravesh	Yatra	4.40
15	Consultancy for DOA	Dr. Shobha	BEL	8.65
16	DSP training	Dr. Shobha	Tata Advance System	1.00
17	Anyang Korean Project	Dr. Donghoon	Anyang Creative Industry	4.81
18	Robert Bosch Engineering and business Solutions Limited	Dr. PK	Robert Bosch	0.90
	Total			66.09

# Total Running Consultancies:

S. No.	Project Title	PI	CP No	Funding Agency	Sanction Amount
1	Technical Consultancy to Central Board of Excise & Customs	Dr.Vinayak Naik & Dr.Pushpendra Singh	16	Central Board Exicse & Customs	1.00
2	CRM-DMS for Indian Oil Corporation	Prof.Pankaj Jalote	17	Indian Oil Corporation	2.50
3	IEEE -Website Consultancy	Dr.Richa Singh	18	IEEE	3.92
4	IEEE -Website Maintenance Consultancy	Dr.Richa Singh	19	IEEE	1.96
5	USB-Korea Consulatancy	Dr.Donghoon Chang	20	Irisys Company Ltd	4.43
6	IEEE Consultancy	Dr.Mayank Vatsa	21	IEEE	4.00
7	SPMCL Consultancy	Dr.Vikram Goel & Dr.Chetan Arora	22	SPMCL	2.50
8	T D : .	D DDC "'	22	K.:: 16   1;	4.20
9	Teracom Project	Dr.P.B.Sujit  Dr.Mohammad  Hashmi	23	Savita Telecom Services	4.20
	Technical consultancy for Savita Telecom Services	1.03		25,71665	1.50

			_		
10	Technical consultancy for development of image tracking on live video using Homography Techniques	Dr.Chetan Arora	25	Beehives systems	0.50
11	Estimating 6-DOF Camera Pose for Augmented Reality Applications	Dr.Chetan Arora	26	Beehives systems	12.00
12	Deep Learning Technologies for Enhancing Fashion Recommendation.	Dr.Chetan Arora	35	Staq Technology	1.05
13	Army Training	Dr.PK	31	МНА	
14	IEEE Biometrics Council - Website and Social Media Pages	Dr.Richa Singh	30	IEEE	0.98
15	IEEE Biometrics Council - Newsletter Design	Dr.Mayank Vatsa	32	IEEE	5.31
16	OSM Training	Dr. PK	28	МНА	1.80
17	WSSEE	Dr. Soumitra	29	WESSEE	6.80
18	Assistance in Hardware	Dr. Alexander Fell	34	Exit 10 Marketing	1.50
19	Development & Design	Dr.Chetan Arora	27	Staq Technology	1.50
	Artificial intelligence technology for enhancing Fashion Recommendation				1.00

20	Identify food pairing opportunities for tea	Dr. Ganesh Bagler	33	Unilever Pvt. Ltd	4.26
21		Dr. Angshul Majumdar	36	TCS	
	Advisory Engagement for Machine Learning				0.61
22	Yatra Online	Dr. Pravesh	38	Yatra	4.40
23	Consultancy for DOA	Dr. Shobha	39	BEL	8.65
24	DSP training	Dr. Shobha	40	Tata Advance System	1.00
25	Anyang Korean Project	Dr. Donghoon	41	Anyang Creative Industry	4.81
26	Robert Bosch Engineering and business Solutions Limited	Dr. PK	42	Robert Bosch	0.90
					99.61

# **Appendix E: Collaboration**

#### Academic

# Dr. Anand Srivastava

- 1. With Prof Byrav Rammoorthy of UNL, co-guide for one of the Ph.D. student
- 2. Research Collaboration with NILES, Cairo University Giza, Egypt (2017-2019)

# Dr. Angshul Majumdar

- 1. Rabab Ward (University of British Columbia). My ex-supervisor. Ongoing projects from Qatar National Research Fund. Visited on July 2016.
- 2. Ivan Bajic (Simon Fraser University). PI for Canadian counterpart of "Energy and Water Disaggregation for Non-Intrusive Load Monitoring in Buildings". My Ph.D. student to visit his Lab for 6 months starting this Fall.
- 3. Emilie Chouzenoux (University of Paris). PI for French counterpart of "Looking Beyond Backpropagation in Deep Learning". My Ph.D. student to visit her Lab for three months in next Winter.

#### Dr. Anubha Gupta

- 1. Dr. Ananya Sen Gupta (University of Iowa) Signal Processing for Underwater Communication, jointly supervised one M.Tech. student registered at IIIT-D, Regular weekly Skype meetings
- 2. Prof. S.D. Joshi (IIT Delhi)- EEG Signal Processing, one Ph.D. student, regular weekly meetings at IIT Delhi
- 3. Dr. Vimal Bhatia (IIT Indore)- UWB communication, one Ph.D. student, regular weekly Skype meetings, two visits by Dr. Bhatia to IIIT-Delhi last year.

# Dr. Arun Balaji Buduru

- 1. Prof. Chester Rebeiro, IIT-Madras; Preliminary discussions on potential collaborations. Visits: Feb. 3, 2017 and Scheduled visit on June 6, 2017.
- 2. Prof. Stephen S. Yau, Arizona State University; Predicting security Breaches in Partially Observable Environments; Visits: May 2-10, 2017

# Dr. A.V. Subryamanyam

1. Professor Mohan Kankanhalli, School of Computing, National University of Singapore, Singapore Dr. Sabu Emmanuel, Assistant Professor, Computer Engineering, Kuwait University, Kuwait Project: Design and Development of Digital Multimedia Forgery Detection System, Source: Deity Number of Students: 2

# Dr. Chetan Arora

- 1. Prof. S.N. Maheshwari, IIT Delhi. Inference algorithms for MRF-MAP. 2 Students.
- 2. Prof. C.V. Jawahar, IIIT Hyderabad. Egocentric Video Analysis. 2 Students.
- 3. Prof. Shmuel Peleg, Hebrew University. Egocentric Video Analysis. 1 Student.
- 4. Prof. M. Balakrishnan, IIT Delhi. Mobility Assistance for Visually Impaired. 8 Students.
- 5. Prof. S. Banerjee, IIT Delhi. Structure from Motion for Egocentric Videos. 6 Students.
- 6. Dr. Gaurav Sharma, IIT Kanpur. Image Captioning. 1 Student.

# Dr. Debajyoti Bera

- 1. Kishore Kothapalli, IIIT-Hyderabad, 2 Masters students were involved on a non funded projects. Project: Role of ear-decomposition on shortest-path problems.
- 2. Subhamoy Maitra, ISI Kolkata. No student was involved and the project was not funded. Project: Quantum computing and cryptography. Visited in Summer 2016.
- 3. Flavio Esposito, University of St. Louis, USA. No student was involved and the project was not funded. Project: Algorithm and Applications of Clique-biclique.
- 4. Rameshwar Pratap, IISc Bangalore (post-doc). The project was not funded. Project: Applications of LSH for data mining.

#### Dr. Ganesh Bagler

1. Prof. V Sunitha, DA-IICT. With my Ph.D. student Vandana Ravindran. Visited in April 2017.

# Dr. Ganga Mamba

- 1. Prof. Joao Goes:
- 2. Prof. Pedro:
- 3. Prof. Deepak Gupta and Dr. Ashutosh Tipathi
- 4. Iman Kainpoor

#### Dr. Gaurav Arora

- 1.David A. Hennessy, Professor of Agriculture, Resource and Food Economics, Michigan State University
- 2.Hongli Feng, Associate Professor of Agriculture, Resource and Food Economics, Michigan State University
- 3. Ruiging Miao, Assistant Professor of Agricultural Economics, Auburn University

- 4. Tong Wang, Assistant Professor of Economics, South Dakota State University
- 5. Christopher Anderson, Research Assistant Professor of Agronomy, Iowa State University
- 6. Peter T. Wolter, Assistant Professor of Natural Resource Ecology and Management, Iowa State University.

# Dr. Mayank Vatsa

1. Prof. Kevin Bowyer, University of Notre Dame

Topic: Facial Retouching Detection, Iris - Cataract detection

Student: Aparna Bharati (Earlier at IIITD, now at UND), Ishan Nigam and Rohit Keshari

2. Prof. Afzel Noore, West Virginia University

Topics: Illicit Drug Abuse Detection, Cognitive Neuroscience, CAPTCHA, Large Scale SVM

Students (from IIITD): Ekampreet Singh Kalsy, Gaurav Goswami, Prateekshit Pandey, Maneet Singh, Shruti Nagpal, Anush Sankaran, Tejas I. Dhamecha, Rohit Keshari, Akshay Agarwal, Soumyadeep Ghosh, Aakarsh Malhotra Students (from WVU): Daksha Yadav, Naman Kohli, Brian Powell

3. Dr. Stephanie Schuckers, Clarkson University

Dr. Adam Czajka, Warsaw University

Topic: LivDet Iris Competition 2017 @ IJCB 2017

#### Dr. M.S. Hashmi

- 1. Prof. Fahdel M. Ghannouchi (University of Calgary, Canada) development of multi-band circuits and components for SDR applications. Prof. Ghannouchi hosted one Ph.D. student in his lab for 8 months and is in the process of hosting another student soon. He also pays for extra page charges in journals and registration charges for conferences.
- 2. Prof. Ramesh Pokharel (Kyushu University, Japan) on-chip antenna techniques.
- 3. Prof. Jaleel Akhtar (IIT Kanpur) Low Cost 1-port Vector Network Analyzer.
- 4. Prof. Paul J. Tasker (Cardi\_ University, UK) Advanced RF Measurement Techniques.

#### Dr. Ojaswa Sharma

- 1. Dr. Archana Mantri, Chitkara University; 1 Ph.D. student; Research visit in April 2017.
- 2. Prof. François Anton, TU Denmark.

#### Dr. P.B. Sujit

- 1. Dr. Ashwini Ratnoo (IISc) Alvika Gautam visited IISc
- 2. Dr. Siva Rathinam (TAMU) Parikshit Maini spent 6 months in TAMU for collaboration/internship

3. Dr. Pratap Totekar (Virginia Tech) – Parikshit and Gautam Gupta (Undergrad) are working on a joint problem

### Dr. Ponnurangam Kumaraguru

- 1. Georgia Tech. Online Social Media. Students = 2.
- 2. Adobe Bengaluru. Students = 2.
- 3. National Technical University Singapore. Students=1. The student spent the last 6 months in Singapore.
- 4. Max Planck Institute. Students = 1. The student is currently visiting MPI.

#### Dr. Pravesh Biyani

- 1. Dr. Jim Hogan, QUT, Australia, 1 Ph.D. student involved (IIITD- QUT partnership)
- 2. Dr. Anthony Man-cho So, CUHK, HK (Visited September 2016)
- 3. Dr. Surendra Prasad, IIT Delhi, 1 Ph.D. student with IIT Delhi involved.
- 4. Dr. Lelitha Devi, IIT Madras (Visited December 2016), Currently hiring a Ph.D. student.
- 5. Dr. Geetam TiwarI, IIT Delhi, 1 Ph.D. student at IIT Delhi involved.
- 6. Dr. Ramchandra Rao Kalaga, IIT Delhi, 1 Ph.D. student at IIT Delhi involved.

#### Dr. Pushpendra Singh

- 1. Mobile Healthcare:
  - a. People
- i. Prof. Nancy Reynolds, Yale University, USA
- ii. Dr. Bhanu Duggal, JJ Hospital, Mumbai
- iii. Dr. Mona Duggal, PGIMER, Chandigarh
  - b. Funding:
- i. One NIH grant was submitted, around \$ 75,000, but it was rejected last year. Currently one project is under review at ICMR.
- 2. IVR+Mobile Systems
  - a. People
- i. Prof. Patrick Olivier, Newcastle University, UK
- ii. Dr. Madeline Balaam, Newcastle University, UK

- b. No. of students: 1
- c. Funding:
- i. Submitted to Indo-UK call but rejected
- 3. Personalized Mobile Services
  - a. People
- i. Prof. Valerie Issarny, Inria, France
- ii. Prof. Nikolaos Gregontas, Inria, France
- iii. Dr. Animesh Pathak, Inria, France
  - b. No. of students: 1
  - c. Funding: One DST-CEFIPRA project for 3 years. Project ended this year.

#### Dr. Rahul Purandre

1. Dr. Subodh Sharma (IIT-Delhi)

Projects: Thread-safety of libraries, 1Ph.D. student working. The work is almost complete. Project: Communication deadlocks in MPI programs: 1 Ph.D. student. The work is almost complete. We regularly conduct meetings over skype when one of the collaborators is traveling and else visit IIT and IIITD alternatively. Our joint work with Dr. Mohan Dhawan (IBM Research) got accepted as a full paper in FSE'16.

2. Dr. Anita Sarma (Oregon State University, USA): Project – Improving Source Code Search using Entity Retrieval Approach, 1 Ph.D. and 2 undergrad students Project is over and the paper got accepted in WSDM (CORE A\* conference).

Project: Code Variants, 2 Ph.D. and 1 undergraduate. The work is over. A paper was submitted to FSE but got rejected. Weekly skype-based meetings. One project is complete and a paper based on that work has been submitted. We are starting a new project.

3. Dr. Geoffrey Nellisen and Dr. David Pareira (University of Porto, Portugal): Project – Runtime Verification of Real-Time Systems, 3 (1 Master's, 2 Undergrads). Bi-weekly skype-based meetings. Developed a tool and the work got accepted in RTSS as tools paper. The project is closed.

4. Dr. Sebastian Elbaum (University of Nebraska – Lincoln, USA)

Project: Analysis of Distributed Robotic Systems, 2 undergraduate students from IIITD. One Master's from UNL (who was our student in IIITD). Dr. Sujit is also a member of the team. The work is almost over. We are working on improving theresults, but need to involved new students since the current students have graduated.

#### Dr. Richa Singh

- 1. Prof. Afzel Noore, West Virginia University, Six students from IIIT Delhi are doing their overseas research fellowship at WVU with Prof. Noore. Three students from WVU are jointly working on different projects. I am spending my sabbatical at WVU from August 2016.
- 2. Prof. Kevin Bowyer, University of Notre Dame Aparna Bharati, Ph.D. Student at UND, Face Retouching Rohit Keshari, Ph.D. Student at IIIT Delhi, Iris Recognition Visited Notre Dame in April 2017.
- 3. Dr. Stephanie Schuckers, Clarkson University and Dr. Adam Czaka, Warsaw University LivDet 2017 with the IEEE International Joint Conference on Biometrics, 2017.

#### Dr. Saket Anand

- 1. Prof. V. Ramesh, Goethe University, Germany, 'Systems Engineering for Computer Vision', 1 UG + 1 RA:
- 2. Mr. Q. Qureshi, Dr. Y. V. Jhala, Wildlife Institute of India, Dehradun, 'Visual Wildlife Monitoring', 1 RA:
- 3. Dr. Ryan Farrell, Asst. Professor, Brigham Young University, USA, 'Visual Wildlife Monitoring', 1 RA (same as WII):
- 4. Dr. Maneesh K. Singh, Verisk Analytics, New Jersey, USA, 'Robust Automatic Speech Recognition', 1 M.Tech.

#### Dr. Sambuddho Chakravarty

1. Dr. Hrishikesh Bhattacharya, Asst. Prof. Rochester Institute of Technology, New York. Working on several (unsponsored) research projects related to network anti-censorship techniques.

#### Dr. Shobha Sundar Ram

1. Prof. Sumit Roy, University of Washington, Seattle, 1 student (Shelly Vishwarkarma) AORD AFRL project (mentioned above)

#### Dr. Sujay Deb

1. Dr. Amlan Ganguly, Rochester Institute of Technology, Project: Interference aware wireless NoC design, number of students: 1, Funding: DST INSPIRE

- 2. Prof. Rolf Drechsler, University of Bremen, Germany, Project: Reliable Interconnects and QoS, number of students: 1, Funding: Applied for
- 3. Prof. Preeti Ranjan Panda, IIT Delhi, Project: Cache coherency in HSA, number of students: 1, Funding: Applied for
- 4. Dr. Pratha Pande, Washington State University , Project: Low power NoC design, Number of students: 1, Funding: DST INSPIRE

#### Dr. Sumit Darak

1. Christophe Moy and Jacques Palicot, CentraleSupelec, France Project Name: RF Energy Harvesting for Wireless Transceivers

No. of students: NA

Amount: 75K (CROWNCOM registration and demo presentation)

Source: CentraleSupelec

2. Manjesh Kumar Hanawal, IIT Bombay

Project Name: Online learning for decentralized wireless networks

No. of students: 1 Amount: NA

#### Dr. Tavpritesh Sethi

- 1. Nigam Shah, Associate Professor, Stanford School of Medicine. Project Name: Early Detection of Sepsis in Pediatric Intensive Care Units through Integration of Clinical and Big Data. I am currently working at Stanford as a Visiting Faculty in the Shah Lab group. Committed Funding: USD 72,000 for subsistence at Stanford.
- 2. Robert Moskovitch, Reader, Ben Gurion University of the Negev. Project Name: Longitudinal Big-data Mining for Prediction and Precision in Critical Care Medicine. Funding: Applied for.
- 3. Anurag Agrawal, Principal Scientist, CSIR-Institute of Genomics and Integrative Biology, New Delhi, India.

### Dr. Vikram Goyal

1. Collaborator: Prof. Sushil K. Prasad, Georgia State University
Project Name: High Utility Pattern Mining over Hadoop and Spark

Number of Students Involved in Project: 2 from IIIT-Delhi and 2 from Georgia State University

#### Dr. Vivek Bohara

- 1. Collaborations with Dr. Prof. Daniel Benevides da Costa of Federal University of Ceará (UFC) and Prof. Ugo Silva Dias from University of Brasília on the project titled "Energy harvesting protocols". One M.Tech. Thesis student was involved in this collaboration.
- 2. Collaborations with Prof. Guan Yong Liang and Dr. Liu Zilong of Nanyang Technological University, Singapore on the project titled "Device to Device communication". Visited NTU once for meetings and seminar. Will be visiting again in summer.
- 3. Collaborations with Dr. Prabhat Sharma of VNIT, Nagpur on the project titled "Receivers for nonlinear MIMO transmitters". Visited VNIT twice for meetings.

### **Industry**

#### Dr. Anubha Gupta

- 1. Prof. Ritu Gupta (AIIMS, Delhi)- Deity funded project on development of Leukoanalyzer (Microscopic Image Analysis)- 46.77 lakh
- 2. Prof. Ajay Garg (AIIMS, Delhi)- fMRI signal and image processing, two students, discussions over phone, bi-monthly visits to AIIMS, New Delhi
- 3. Dr. Krishnaveni Achary and Blessin Varkey: Tamana NGO, regular monthly meetings

#### Dr. A.V. Subryamanyam

1. Kuntal Dey, IBM, India, Project 1: Facial Landmarks for Video Compression over Low Bandwidth Channels, Project 2: Ad to Ad Generation using Text InfoGAN, Number of Students: 2

#### Dr. Chetan Arora

1. Dr. Vivek Kwatra, Google.

#### Dr. Mayank Vatsa

1. Dr. Nalini Ratha, IBM TJ Watson Research Center

Topic: Deep Learning Student: Gaurav Goswami

#### Dr. M.S. Hashmi

1. Mr. M. Sohaib(Director, Siways Microelectronics) - Cost Effective WiFi Booster.

#### Dr. Ojaswa Sharma

1. Dr. Julie Digne, LIRIS, France.

#### Dr. Pravesh Biyani

1. Dr. Akshay Soni, Yahoo-inc, USA (Visited September 2016), 1 R.A involved.

#### Dr. Pushpendra Singh

- 1. Mobile Healthcare:
  - a. People
- i. Prof. Nancy Reynolds, Yale University, USA
- ii. Dr. Bhanu Duggal, JJ Hospital, Mumbai
- iii. Dr. Mona Duggal, PGIMER, Chandigarh
- b. Funding: i. One NIH grant was submitted, around \$ 75,000, but it was rejected last year. Currently one project is under review at ICMR.

#### Dr. Richa Singh

1. Dr. Nalini Ratha, IBM IRL Gaurav Goswami, Ph.D. Student at IIIT Delhi, Deep Learning Visited IBM TJ Watson in November 2016.

#### Dr. Saket Anand

1. Dr. Ravi Kumar, Infosys Advanced Engineering Team, Mysore, 'Autonomous Golf Cart', 3 students (part-time).

#### Dr. Sanjit Kaul

- 1. Engaged with Infosys, Mysore. They were interested in our proposal of autonomous last-mile connectivity (entered as project SWARATH in the Mahindra Rise Challenge). Visited them in Mysore, helped them setup a demo and hosted them a few times at IIIT.
- 2. Continental AG has provided support for our entry in the Mahindra Rise challenge by providing us with their short range automotive RADARs. They are interested in the performance evaluation of RADAR(s) in Indian conditions. Continental, Bangalore, visits us often.

#### Dr. Shobha Sundar Ram

1. Dr. Anshu Gupta, Continental Inc. Bangalore, Advanced Driver Assistance Systems (Radar Division) 4 M.Tech. thesis (current academic year) under joint supervision

### Dr. Sujay Deb

1. Dr. Manoj K. Das, The INCLEN Trust, Project: Cuffless BP monitor, Number of students: 2, Funding: Indo-US, Amount: Rs. 40,94,000.

#### Dr. Sumit Darak

1. Yves LOUET, CentraleSupelec, France and Anil Kumar, TCS Innovation Labs, Bangalore

Project Name: Non-uniform sampling for multi-antenna receivers

No. of students: 1

Amount: ISWCS registration and conference paper presentation

Source: CentraleSupelec

2. Pratik Sikka, NXP Semiconductors, Delhi

Project Name: Wireless transceiver implementation on Zynq SoC

No. of students: 1 Amount: NA

#### Dr. Vinayak Naik

- 1. DST-SERB funded project titled Mobile-based Diagnosis of Sleep Apnoea for  $\Box 55,43,000$  as mentioned earlier in this report
  - a. A research group led by Prof. Sharma (Head of Internal Medicine), Prof. Sinha, and Prof. Soneja from AIIMS, New Delhi

## **Appendix F: Awards and Recognitions**

### **Alexander Fell**

- 1. Ranked third in the Microsoft Research IoT summer school hold at CDS, IISc, Bangalore
- 2. Best Teacher Award of the outgoing B.Tech. class

### **Anand Srivastava**

Erasmus Mundus Fellowship [visiting Scholar to Aston University, UK] Visiting period: June/July 2016

### **Angshul Majumdar**

Teaching Excellence award from the graduating batches of B.Tech. and M.Tech. 2017

### **Anubha Gupta**

1. Lead Symposium Organizer on "Symposium on Big Data Analysis and Challenges in Medical Imaging," IEEE GlobalSip, 2016 Conference, held from Dec. 7-9, 2016, Washington DC, USA; Co-organizers: Dr. Namrata Vaswani, Iowa State University, USA and Selin Aviyente, Michigan State University, USA.

Link: http://www.ieeeglobalsip.org/sym/16/BDMI.

- 2. TPC member of IEEE PIMRC 2017, IEEE PIMRC 2016, ICSC 2016.
- 3. Our research paper titled "Novel Level Set Framework for Plasma Cell Segmentation from Microscopic Images of Multiple Myeloma," earned second prize for poster award at Multiple Myeloma-State of the Art, PGIMER, Chandigarh, India, September 2016.

## <u>Debajyoti Bera</u>

Best paper award in HiPC, 2016.

### **Debarka Sengupta**

INSPIRE Faculty award, 2016

### **Donghoon Chang**

1. Designated as the first Global Family of Anyang city, Korea due to the effort of building the partnership between India and Korea, September, 2016.

#### **Gaurav Arora**

1. James R. Prescott Fellowship for creativity in research at the Department of Economics, Iowa State University (Award Ceremony- January 9, 2017).

### **Mayank Vatsa**

- 1. Best Poster Presentation Award at IEEE International Conference on BTAS, Buffalo, USA 2016
- 2. Award of Appreciation at IEEE International Conference on BTAS, Buffalo, USA 2016
- 3. Received Teaching Excellence Letter, IIIT Delhi, 2016

#### **Mohammad S. Hashmi**

- 1. DeitY Young Faculty Research Fellowship for 5 years (2016-2021).
- 2. Teaching Excellence Award from Senate Chair for RFCD taught in Winter 2016.
- 3. IEEE MTT-S Delhi Chapter Executive Committee Member.
- 4. Associate Editor, IEEE Microwave Magazine.
- 5. Best Paper Award, IEEE 59th Midwest Symposium on Circuits and Systems (MWS-

CAS) 2016, Held in Abu Dhabi Last Year, October 2016

### Pydi Ganga Mamba Bahubalindruni

Early career research grant – around 46Lacs Golden reviewer for IEEE journal – Electron device letters

### Richa Singh

- 1. Best Poster Presentation Award at IEEE International Conference on BTAS, Bu\_alo, USA 2016
- 2. Award of Appreciation at IEEE International Conference on BTAS, Bu\_alo, USA 2016
- 3. Teaching Excellence Letter, IIIT Delhi, 2016

#### **Sneh Saurabh**

- 1. Early Career Research Award by Science and Engineering Research Board (SERB)
- 2. Editorship for IETE Technical Review

#### Sujay Deb

- 1. Publicity Chair of VLSI Design Conference 2017
- 2. Associate Editor of IET Computers & Digital Techniques
- 3. Champion in VLSI Design Contest 2017
- 4. Invited to present our startup idea in Nasscom Product Enclave on 26-27 October 2016.
- 5. Track chair of IEEE International Symposium on Nanoelectronic and Information Systems (iNIS) 2017

#### **Sumit J. Darak**

Best Demo Award at CROWNCOM 2016.

### **Tavpritesh Sethi**

1. Royal Society Diversity Travel award for attending the Commonwealth Science Conference, 2017

### **Vikram Goyal**

Member, Board of Studies Chandigarh University

### Vinayak Naik

- 1. Teaching Excellence Award by 2017 Graduating Batch of B.Tech. and M.Tech.
- 2. An award for poster titled "Sniffer-based Inference of the Causes Of Active Scanning in WiFi Networks" at Research Showcase, New Delhi, India on April 2, 2017
- 3. An award for demo titled "Understanding Writing Behavior of Students using Motion Sensors in Smartwatch" at Research Showcase, New Delhi, India on April 2, 2017
- 4. Best Paper Award for paper at Workshop on Wild and Crazy Ideas on the interplay between IoT and Big Data (WACI'17) in conjunction with the 9th International Conference on Communication and Networks (COMSNETS'17), Bangalore, India, Jan 4-8 2017

### **Vivek A Bohara**

Session Chair for IEEE ANTS 2016 held in Indian Institute of Science (IISC) Bangalore. Session Chair for ICACCI 2016 held in LNM Institute of Information Technology (LNMIT), Jaipur

## **Appendix G: Invited as Guest Speaker**

### **Alexander Fell**

1. Talk at IIT Mandi about "Compiling techniques for CGRAs"

#### **Anand Srivastava**

- 1. Expert Lecture on Li-Fi at Ambedkar Institute of Technology
- 2. Lectures at Aston University, Birmingham, UK as part of Errasmus Mundus Fellowship

### **A V Subramanyam**

- 1. 'Visual Forensics and Surveillance, Workshop on Communications and Multimedia Security, IIT
- 2. Dhanbad, India, 2017
- 3. 'Forensic Multimedia Processing', Technology Showcase, BITS Hyderabad, India, 2017
- 4. 'Multimedia Forensics and Security', NetSec, IIT Roorkee, India, 2016
- 5. 'Forensic Data Processing', Cyber Security and Assurance, SAG/DRDO, Delhi, India, 2016
- 6. 'Counter Forensics of Linear and Non-linear Image Processing', Computer Security Workshop,
- 7. Delhi, India, 2016

### **Angshul Majumdar**

- 1. "From Compressed Sensing to Deep Learning", IEEE Signal Processing Society Lecture, SFU, May, 2017.
- 2. "Deep Learning in Medical Imaging", Medtronics Neurosurgery, Denver, Colorado, March, 2017.
- 3. "Regularized Autoencoder", IEEE SPS Winter School in Machine Learning for Biometrics, New Delhi, India, February, 2017.
- 4. "From Signal Processing to Deep Learning", IEEE Signal Processing Society Lecture, UBC, Vancouver, July, 2016.

## Anubha Gupta

- 1. Delivered an invited talk on "Multivariate vector regression analysis in building brain networks" in the ECE Deptt. at Michigan State, University, USA, Dec. 06, 2016.
- 2. Delivered a talk on "Computer Vision Inspired Assistive Technologies for Autistic kids," Workshop on Computer Vision for Persons with Disabilities at IIIT-Delhi on Oct 15, 2016.
- 3. Delivered an invited talk on "Machine Learning in Functional MRI Signal Processing" in the Faculty Development Program (FDP) at Delhi Technological University (DTU) on July 14, 2016.
- 4. Delivered two guest lectures on functional MRI analysis at IIT Mandi on May 12 and 13, 2016.

#### **Anuradha Sharma**

- 1. Delivered an invited lecture in "National Conference on Algebra, Analysis, Coding and Cryptography" organized by Department of Mathematics, Delhi University during October 14-16, 2016.
- 2. Delivered an invited talk in the Indian Science Congress (ISC) Symposium on Algebraic Coding Theory during January 3-7, 2017.

### Arun Balaji Buduru

- 1. Invited Lecture on "Adaptive Protection of Cyber Infrastructures with Reinforcement Learning Techniques" at IGDTUW-Delhi
- 2. Invited Talk on "User-Centric Approaches for Protecting Cyber Infrastructures with Self-Learning Capabilities", at Fifth Security & Privacy Symposium, Feb. 2017, New Delhi

### **Chetan Arora**

- 1. April 25, 2017: Talk on Deep Learning as part of Advanced Technical Talks program at Cadence, Noida.
- 2. March 31, 2017: Talk on Computer Vision and Machine Learning, at Evolute 2017, the annual conference organized by SIAM at DTU.
- 3. January 14, 2017: Lecture on Deep Reinforcement Learning and Egocentric Computer Vision, in a short course on Deep Learning and Applications organized by IIT Kanpur.
- 4. December 27-29, 2016: Attended Mysore Park Workshop on Vision, Language, and AI (attendance by invitation only). Also gave a talk on some of our recent works on Egocentric Vision.
- 5. July 13, 2016: Lectures on Deep Recurrent Neural Networks and Egocentric Computer Vision at Summer School on Deep Learning and Computer Vision organized by IIIT Hyderabad.

## **Debajyoti Bera**

- 1. Seminar at Ashoka University in Feb 2017. Title: Get the graphs by their ears.
- 2. Several lectures in Summer School on Cryptology, ISI on Fundamentals of Quantum Computing.

## **Donghoon Chang**

- 1. Invited Lectures, "Design of Cryptographic Primitives secure against Side-channel Attacks", Seoul National University of Science and Technology, Korea, 3-4 November, 2016.
- 2. Invited Lecture, "Biometric-based Authentication and Fuzzy Extractors", ETRI (Electronics and Telecommunications Research Institute), Korea, 2 November, 2016.
- 3. Invited Lecture, "Fully Homormorphic Encryptions", KISA(Korea Internet & Security Agency, Korea, 1 November, 2016.

- 4. Invited Lecture, "Biometric Security", MAIT, Maharaja Agrasen University, 8 April, 2016.
- 5. Invited Lecture, "Challenges, Issues of Modern Cryptography", ISM Dhanbad, 3-5 March, 2016.
- 6. Invited Lecture, "Authentication Mechanism", Delhi Technical University, 20 January, 2016.

### Ganesh B. Bagler

- 1. Cadence Advanced Technology Talk: "Can a biologist fix a radio? Challenges and opportunities in Computational Biology" at Cadence Design Systems, New Delhi on 9th September 2016.
- 2. Participated in the FameLab science communication competition (North India) after being shortlisted. Presented a pitch on 'Can scientific diets cure diseases?'.
- 3. Invited talk: Round Table on Great Indian Cuisine, 'The molecular essence of Indian cuisine and its applications' organized by Central University of Haryana at the ITC Sheraton, New Delhi on 24th June 2016.
- 4. Invited Talk: 'Challenges and opportunities in Computational Biology' at ICMR Bioinformatics Centre at Pandit Jawaharlal Nehru Memorial Medical College Raipur, Chhattisgarh, on 7th November 2016.
- 5. Invited talk: 'Leveraging food for better health through data-driven approaches' at 'Central University of Rajasthan' on 23rd January 2017.
- 6. Invited Talk: 'Data-driven discovery of the molecular essence of Indian cuisine' at CSIR-Centre for Cellular and Molecular Biology, Hyderabad, on 23rd December 2016.
- 7. Invited talk: "Computational modeling of biological complex systems" at Solapur University, Solapur, on 30th Dec 2016.
- 8. Invited Talk: 'The molecular essence of Indian cuisine and its applications' at the Biotechnology Department, Guru Nanak Dev University, Amritsar on 19th July 2016.
- 9. Institute Seminar @ IIIT-Delhi: 'Leveraging food for better health through data-driven approaches' on 19th January 2017.

### **Mayank Vatsa**

- 1. Deep Learning for Face Recognition: Looking Beyond CNNs, University of Notre Dame, South Bend, April 2017
- 2. Deep Learning and Fingerprint Recognition, IEEE Winter School on Machine Learning in Biometrics, New Delhi, India, February 2017
- 3. CNN and RBM, IEEE Winter School on Machine Learning in Biometrics, New Delhi, India, February 2017
- 4. Introduction to Deep Learning, IEEE Winter School on Machine Learning in Biometrics, New Delhi, India, February 2017
- 5. Deep Learning for Biometrics, GIAN Course on International Course on Multimodal and Advanced Biometrics Authentication, MNIT Jaipur, January 2017
- 6. Deep Learning for Biometrics, GIAN Course on Biometric-based Authentication and De-identification for Privacy Protection, MNIT Jaipur, December 2016
- 7. Face Recognition and Deep Learning: Progress and Challenges, Rutgers University, New Jersey,

November 2016

- 8. Face Recognition and Deep Learning: Progress and Challenges, IBM T. J. Watson Research Center, New York, November 2016
- 9. Deep Learning, Delhi Technological University, New Delhi, July 2016

### Mohammad S. Hashmi

- 1. Changing Paradigm in Power Ampli\_er and Transmitter Design Tech- niques during RF workshop at National Institute of Technology Patna (NIT Patna) on 1st June 2016.
- 2. Low Noise Ampli\_er: Theory, Design Techniques, and Architectures during Faculty Development Program at NIT Patna on 31st May 2016.
- 3. Conducted 3-days (October 1-3, 2016) Short-Course on Active RF Circuit Design at IIIT Delhi. It was sponsored by Keysight Inc. The attendees were mainly faculty members and research scholars from institutes located in North India. The participation was limited for 60 attendees due to limited ADS licenses.
- 4. (a) Organized 1-day MATLABWorkshop sponsored by MathWorks at IIIT Delhi on 15th December 2016. Over 60 participants attended this workshop. (b) Organized TI Analog Design Competition for North Zone, October 2016.

### Ojaswa Sharma

1. Invited talk at TCS Research, Gurgaon on various research activities within the graphics research group at IIIT Delhi (August 2016).

### Ponnurangam Kumaraguru

- 1. Instructor: Organized 4+ CEPs this year in campus on Using Online Social Media for Policing, Intelligence, Investigation, and Law & Order.
- 2. Data Science for Security and Privacy. Technology Meetup Data Analytics. Organised by Sapient, Gurugram. April 22, 2017. 40+ industry practitioners attended.
- 3. Data Science for Security and Privacy. Raksha Shakti University. April 20, 2017. 100+ students / faculty attended.
- 4. SNA and OSI Analysis of DRDO: Mechanisms, Impact and Scenario Analysis. DRDO. April 13, 2017. 30+ scientists / officers attended.
- 5. Privacy and Security in Online Social Media. ACM Distinguished Speaker Lecture. IIIT Allahabad. April 11, 2017. 60+ students / faculty attended.
- 6. Privacy and Security in Online Social Media. ACM Distinguished Speaker Lecture. Amrita University. March 28, 2017. 80+ students / faculty attended.
- 7. Privacy and Security in Online Social Media. Bosch India, Bengaluru. March 15, 2017. 80+ Bosch employees attended. Keynote

- 8. Privacy and Security in Online Social Media. ACM Distinguished Speaker Lecture. S A Engineering College. March 7, 2017. 50+ students / faculty attended.
- 9. Credibility, Identity Resolution, and Privacy on Online Social Media. DIO National Meet on Grass root Iformatics organized by NIC. Feb 28, 2017. 120+ NIC officers attended.
- 10. Privacy and Security in Online Social Media. ACM Distinguished Speaker Lecture. Manav Rachna International University. Feb 22. 60+ students / faculty attended.
- 11. \_ Social Media and Analytics as an Intelligence Tool. Seventeenth International National Security Guard Seminar, Feb 9, 2017. 200+ officers attended.
- 12. \_ Credibility, Identity Resolution, and Privacy on Online Social Media. At IEEE International Conference on Computing, Analytics and Security Trends (CAST-2016), College of Engineering Pune. Dec 20, 2016. 100+ participants attended.
- 13. Privacy and Security in Online Social Media. CAIR DRDO. Dec 15, 2017. 20+ scientists attended.
- 14. Credibility, Identity Resolution, and Privacy on Online Social Media. Indian Institute of Technology, Kharagpur (IITKGP). ACM Distinguished Speaker talk. Nov 17, 2016. 30+ students / faculty attended.
- 15. Credibility, Identity Resolution, and Privacy on Online Social Media. As part of Indo Belarus Bilateral Workshop on Cyber Security at CDAC Noida. Nov 16, 2016. 30+ delegates attended.
- 16. Research at Precog! Bosch, Bengaluru. Nov 9, 2016.
- 17. Identity Resolution, Privacy, and Policing on Online Social Media. University of Baltimore County (UMBC), USA. ACM Distinguished Speaker talk. Oct 14, 2016. 15+ participants.
- 18. Research, Education, and Cybersecurity Policies in India. Harvard University, USA. Oct 13, 2016.
- 19. Introduction to Cybersecurity. Army HQ, Delhi. As part of a Cyber Security course offered by CERC. Oct 5 6, 2016. 20+ participants.
- 20. Online Social Media: Privacy and Security Implications. As part of DWIH Conference: CitySpaces organized by Max Planck Gesellschaft (MPG). Sept 29, 2016. 100+ participants.
- 21. Credibility, Identity Resolution, Privacy, and Policing on Online Social Media. Indian Institute of Technology, Guwahati (IITG). ACM Distinguished Speaker talk. Sept 24, 2016. 90+ participants.
- 22. Privacy and Security in Online Social Media. International Symposium on Security in Computing and Communications (SSCC'16), Jaipur, India. 100+ participants. Keynote
- 23. Privacy and Security in Online Social Media. As part of the course Cryptology and Information Security (CIS) organised by Defence Research and Development Organisation (DRDO). Sept 8, 2016. 25+ participants.
- 24. Digital Forces Social: Research at Precog@IIIT-D, Future Trends, Potential Student Projects. As part of NPTEL & TCS's Faculty Development Programme to faculty from various engineering colleges in India. Sept 7, 2016. 100+ participants.
- 25. Stop-Think-Connect: Past, Present, and Future. As part of Anti Phishing Working Group Symposium, Bern, Switzerland. Sept 1, 2016. 30+ participants.
- 26. Privacy and Security in Online Social Media. ETH Zurich, Switzerland. July 7, 2016. 30+ participants.
- 27. Privacy and Security in Online Social Media. GESIS Leibniz Institute for the Social Sciences, Koln, Germany. June 28, 2016. 20+ participants.

28. Online Social Media: Opportunities, Challenges, and Pitfalls. Summer Workshop on Online Social Media: Developer's Perspective at IGDTUW, Delhi. June 6, 2016. 50+ participants. Keynote

### Pravesh Biyani

- 1. Talk at CUHK, HK on my work on Optimisation for Communications.
- 2. Spoke at IIT Madras on my work on Data Collection for Transportation and related challenges.
- 3. Organised Workshop at IIT Madras on Sustainable transportation.

### Pydi Ganga Mamba Bahubalindruni

- 1. Invited talks: National center for flexible electronics, IIT Kanpur
- 2. Actively participating in European projects

#### **Rahul Purandare**

- 2. Was invited to give a talk at IISc on automatic program repair.
- 3. Was invited by DRDO-SAG to give a talk on code security.

### Richa Singh

- 1. Deep Learning Beyond CNNs, University of Notre Dame, April 2017
- 2. Introduction to Machine Learning, IEEE Winter School on Machine Learning in Biometrics, New Delhi, February 2017
- 3. Introduction to Biometrics and Performance Evaluation, IEEE Winter School on Machine Learning in Biometrics, New Delhi, February 2017
- 4. Transfer Learning, IEEE Winter School on Machine Learning in Biometrics, New Delhi, February 2017
- 5. Face Recognition and Deep Learning: Progress and Challenges, Rutgers University, November 2016
- 6. Face Recognition and Deep Learning: Progress and Challenges, IBM T. J. Watson Research Center, New York, November 2016
- 7. Machine Learning in Face Recognition, Delhi Technological University, New Delhi, July 2016
- 8. Domain Speci\_c Learning for Newborn Recognition, Infant Biometric Workshop, UIDAI, Bangalore, June 2016
- 9. Domain Speci\_c Learning for Newborn Recognition, Samsung, Advanced Technology Labs, Bangalore, June 2016

#### **Saket Anand**

1. Invited lecture on Distance Metric Learning at the Winter School on Machine Learning in Biometrics (MLIB), 2017, co-located with ISBA 2017, New Delhi.

### Sambuddho Chakravarty

1. Invited talk – Cybersecurity 101 – Department of East Asian Studies, Delhi University, March 2017

### Sanjit Krishnan Kaul

Keynote at Cadence, Noida, at the Cadence Technical Conference on Sep 22, 2016. (Together with Saket Anand and P. B. Sujit)

Helped facilitate organization of the WiFi KS workshop at IIIT by Mojo Networks

### **Sarthok Sircar**

1) Conference talk: Australia and New-Zealand Industrial and Applied Mathematics, 2016 in Canberra, AU

#### **Shobha Sunder Ram**

- 1. Tutorial on "Micro-Doppler radar for sensing humans," at IEEE Asia Pacific Microwave Conference 2016, New Delhi India
- 2. Invited talk to Continental Inc. Bangalore, Radar department under Advanced Driver Assistance Systems (ADAS)

#### **Sneh Saurabh**

1. Co-organized "Workshop on Emerging Technologies in ECE", 22nd May 2017 at IIIT Delhi Close to 50 participants attended the workshop, a majority of them being fresh graduates and young professionals outside IIITD

It helped outreach of ECE department

- 2. Reached out to companies in NCR for possible collaboration
- a. M.Tec.h student got offer for Internship at Synopsys
- b. Organized interviews for M.Tech. students at Cadence for internship and explored possibility of collaboration in different domains
- c. Faculty members of IIITD presented Advanced Technical Talks and Keynote addresses at Cadence Technical Conferences
- 3. Presented "An overview of Nanoelectronics", Workshop on Emerging Technologies in ECE, 22nd May 2017, IIIT Delhi
- 4. Presented "Green Transistors: Futuristic Energy-Efficient Devices", Institute Seminar IIIT Delhi, 4th August 2016

### Sriram K.

Delivered series of lectures in JNU on Dynamical systems for the computational science students. I was Invited by Dr. Arnab Bhattacharjee.

#### **Shriram Venkatraman**

- 1. Acted as a resource person for University of Pennsylvania South Asian Research Methods Workshop held in Delhi National Law University
- 2. Guest lectured on Ethnography as a research methods to Mphil/Ph.D. students of Central Asian Studies at School of International studies, Jawaharlal Nehru University, New Delhi

### Sujay Deb

- 1. Invited lecture at STTP on VLSI and Embedded System Design, at Nirma University on May 24, 2016
- 2. Invited lecture at Faculty Development program at Jaypee Institute of Information Technology, Noida, on July 18, 2016.
- 3. Invited lecture at Tripura Institute of Technology, Tripura on Current research trends in VLSI on 31st October 2016.
- 4. Invited expert lecture in the workshop on circuits and system design challenges for IoT at Aligarh Muslim University, Aligarh on February 18, 2017.

#### Sumit J. Darak

- 1) Invited speaker for short term course "Towards 5G: The Key Enabling Technologies" at NIT Patna.
- 2) Research talk on "Decision Making Policies for Green Radio" at IIT Delhi
- 3) Invited speaker for short term faculty development programme on "Emerging Trends in Computer and Electronics Communications" at AIACTR Delhi.
- 4) Inviter expert lecture on "Decision Making Policies for Smart Grids" at JIIT Noida
- 5) Poster presentation at DST INSPIRE Meet, SSN College of Engineering, Chennai.

### **Tavpritesh Sethi**

- 1. Speaker at TEDxAIIMS, September 26, 2016. Topic: The New Pulse of Medicine.
- 2. Teaching and hands-on session on Machine Learning at Department of Biomedical Science of Bhaskaracharya College of Applied Sciences (BCAS), University of Delhi as a part of their course on Bioinformatics and in-silico Drug Discovery, May 2016.

- 3. Session in Workshop on Machine Learning and its applications, South Asian University, New Delhi, April, 30, 2016.
- 2. Speaker at Joint Workshop on Systems Biology of Antimicrobial Resistance organized in Delhi by Indian Council of Medical Research and National Institute of Allergy and Infectious Diseases, NIH, USA. January, 2016.

## **Vikram Goyal**

- 1. Expert talk at FDP on the subject area "Emerging Trends in Computer and Electronics Communications", AIACTR Delhi, 6th March 2017.
- 2. Invited talk at FDP on "Big Data Analyitcs" at ITS, Greater Noida, 12th January 2017.
- 3. Invited Talk at International Workshop on Hybrid Soft Computing and Data Analytics, at South Asian University, Delhi, 11 Jan 2017.
- 4. Expert talk at Workshop on "Data Science Research", sponsored by DST at Hindustan College of Science and Technology, Mathura, 17th December, 2016.
- 5. Expert Talk at FDP on the subject area "Big Data Analytics/ Text Mining using SPSS", YMCA University Faridabad, 20 December 2016.
- 6. Expert Talk on the topic of "Map-Reduce design Patterns" at CDAC Mohali, 15th July 2016.
- 7. Invited talk at DST sponsored workshop at MRU on the topic of Big Data Analytics, 9th June 2016.
- 8. Invited Talk at Shimla University on the topic of Big Data Analytics, 23rd May, 2016.

### Vinayak Naik

- 1. Invited speaker at IBM Collaborative Academia Research Exchange Conference (I-CARE'16), in Bangalore on Oct 14-15, 2016
- 2. Invited talk titled "Software Defined Network and its Use in Security" at ABES Engineering College, Ghaziabad on July 12, 2016
- 3. Invited talk titled "Using Smartphone-based Accelerometer to Detect Travel by Metro Train" at Microsoft Research, Bangalore on June 16, 2016

#### Vivek A Bohara

Seminar titled "Spectrum Sharing Frameworks for Device-to-Device Communication" at Nanyang Technological University on 31st May 2017.

## **Appendix H: Professional Services**

#### **Alexander Fell**

- 1. Reviewer for iNIS
- 2. M.Tech. defense examiner at IIT Delhi
- 3. Faculty coordinator the Mini Maker Faire held at IIIT-D

#### **Anand Srivastava**

- 1. Expert member for selecting faculty for state funded engineering colleges conducted by Chattisgarh State Public Service Commission
- 2. Expert member for selecting faculty for state funded engineering colleges of NE region conducted by UPSC
- 3. Chairman of the committee formed by MEITY for selecting Scientist B.

### **A V Subramanyam**

- 1. Program Committee Member
- Member, Program Committee, ACM Multimedia, California, USA
- Member, Program Committee, International Conference on Computer Vision & Image Processing, Delhi, India
- 2. Ad-hoc Reviewer
- IEEE Transactions on Multimedia
- IEEE Transactions on Circuits and Systems for Video Technology
- ACM Transaction on Multimedia Computing, Communications and Applications
- PLOS ONE Journal
- Springer Journal of Multimedia Tools and Applications
- Springer Journal of Multimedia Systems
- SPIE Journal of Electronic Imaging
- Elsevier Journal of Information Security and Applications

### **Angshul Majumdar**

- 1. IEEE Signal Processing Society, Chapters' Chair (2016-2018)
- 2. Chair, IEEE Signal Processing Society, Delhi Chapter (2015 )
- 3. Finance Chair, IEEE ISBA (IEEE Biometrics Council Flagship Conference).
- 4. Reviewer for ICASSP, ICIP, EUSIPCO, MICCAI and Reviewer for Pattern Recognition, Information Fusion, IEEE TIP/TSP/Cybernetics, TGRSS etc.
- 5. Program Committee ICONIP 2017 (CORE A).

### **Anubha Gupta**

- 1. Participated in four NBA (National Board of Accreditation, India) accreditation visits as ECE expert for UG and PG programs.
- 2. Reviewer for leading conferences ICIP 2017, NCC 2017, MICCAI 2017, IEEE GlobalSIP 2016, ICVGIP 2016, MedImage 2016, TenSymp 2017. Also reviewed journal papers for Signal Processing (Elsevier), Electronics Letters, and Biomedical Signal Processing and Control (Elsevier) in the last academic year.
- 3. M.Tech. External Examiner, IIT Delhi

### **Anuradha Sharma**

- 1. Reviewer for Mathematical reviews of the American Mathematical Society.
- 2. Reviewer for IEEE Trans. Inform. Theory
- 3. Reviewer for Finite Fields and their applications
- 4. Reviewer for Discrete Mathematics
- 5. Reviewer for Journal of Applied Mathematics and Computing
- 6. Reviewer for The Journal of the Franklin Institute.
- 7. Reviewer for Discrete Applied Mathematics.
- 8. Program committee member for "National Conference on Algebra, Analysis, Coding and Cryptography" organized by Department of Mathematics, Delhi University during October 14-16, 2016

### Arun Balaji Buduru

- 1. Reviewer for IEEE Transactions on Service Computing
- 2. Reviewer for IEEE International Conference on Mobile Services

#### **Chetan Arora**

- 1. Program Co-Chair for NCVPRIPG 2017.
- 2. Area Chair for ICVGIP 2016.
- 3. Session chair in ICVGIP 2016.
- 4. November 20, 2016: Co-organized a workshop on "Assistive Vision" in conjunction with ACCV 2016 at Taipei.
- 5. October 15, 2016: Organized a workshop on "Computer Vision for Persons with Disabilities" at IIIT Delhi.
- 6. Reviewer for leading journals PAMI, TMM, TIP etc.

7. Reviewer for all leading vision conferences: ICCV, CVPR, ECCV, ACCV, BMVC, IJCAI etc.

### **Debajyoti Bera**

- 1. Expert committee member for curriculum development, IGNOU.
- 2. Member of TPC for conference IC3 2016.
- 3. Reviewer of CCC, 2017.

### **Donghoon Chang**

- 1. Organizing Chair, India-Korea ICT Workshop, 12-13 August, IIIT-Delhi, 2016.
- 2. Organizing Chair, The first R&D lab inaugural Ceremony in IIIT-Delhi, 28 January, IIIT-Delhi, 2016. Establishment of IRISYS-IIITD R&D lab in IIIT-Delhi
- 3. Editor, Journal of Platform Technology (2016)
- 4. Program Committee Member, ICISC 2016, Inscrypt 2016

### Ganesh B. Bagler

- 1. Program Committee Member of COMPLEXIS-2017.
- 2. Conducted a One Day session in the "National Workshop on Networks in Biological Systems" at Bioinformatics Facility, Depart of Molecular Biology and Biotechnology, Tezpur (Central) University on 19 Feb 2017.
- 3. Acting as a Mentor for the DU-CIC Star Innovation Project at SVC: "Network analysis in the systems biology of neurological disorders". (Two discussion meetings for advising a group of around 8-10 students)
- 4. Reviewed a proposal for Indo-US Workshop for Indo-US Science and Technology Forum (IUSSTF): Text Mining for Bio Medical Data. On request from Noreen Henson, Senior Editor of the Genetics, Genomics and Systems Biology program at Springer Nature, New York.
- 5. Reviewed proposal for a book volume for Springer, "Computational Prediction of Genome-Scale Protein-Protein Interactions".
- 6. Peer reviewed research articles for Physica A, PLoS One, Royal Society Open Science and COMPLEXUS 2017.

#### **Gaurav Arora**

- 1. Reviewed one paper each for
- a. Journal of Soil and Water Conservation and
- b. Journal of Agricultural and Applied Economics.

#### **Mayank Vatsa**

- 1. Associate Editor, IEEE Access, 2016 Present
- 2. Area Editor, Information Fusion, Elsevier, 2012 Present
- 3. Vice President Publications, IEEE Biometrics Council, 2015 Present (Second term started in 2017)
- 4. Program Co-Chair, IEEE International Conference on Identity, Security and Behavior Analysis, New Delhi, India, February 2017
- 5. Publications Chair, IEEE International Conference on BTAS, Buffalo, USA, September 2016
- 6. Area Chair, IAPR International Conference on Biometrics, Halmstad, Sweden, June 2016
- 7. Publicity Chair, IEEE International Conference on Automatic Face and Gesture Recognition, May 2017
- 8. Technical Program committee for the following:
- British Machine Vision Conference, London 2017
- International Joint Conference on Biometrics, Denver, 2017
- International Conference on Computer Vision, Venice, Italy 2017
- IEEE International Conference on Computer Vision and Pattern Recognition, Honolulu, Hawaii, June 2017
- IEEE International Conference on Image Processing, Beijing, China 2017
- European Conference on Computer Vision, Amsterdam, The Netherlands, October 2016
- IEEE International Conference on Image Processing, Phoenix, USA, September 2016
- International Conference on Pattern Recognition, Cancun, Mexico, December 2016
- IEEE International Conference on Biometrics: Theory, Applications and Systems, Niagara Falls, September 2016
  - 9. Events Organised
  - 1. LivDet Liveness Detection Competitions, with The International Joint Conference on Biometrics, Denver, USA 2017
  - 2. IEEE Winter School of Machine Learning in Biometrics, New Delhi, India, February 2017
  - 3. IEEE International Conference on Identity, Security and Behavior Analysis, New Delhi, India, February 2017
  - 4. IEEE International Conference on Biometrics: Theory, Applications, and Systems, Buffalo, USA, September 2016

#### **Mohammad S. Hashmi**

- 1. Reviewer for leading conferences APCAP, IMS, IMaRC, APMC, and ISCAS. Also reviewed papers for PIER Journals, IEEE Transaction on Instrumentation and Measurements, IEEE Microwave Magazine, IEEE Microwave Wireless Component Letters (MWCL), IEEE Transactions on Circuits and Systems -II, and ElsevierJournal (IEB)in the past twelve months.
- 2. IEEE Delhi Chapter Standing Committee Member
- 3. M.Tech. External Examiner at IIT Delhi; Gautam Buddha University; Jamia Millia Islamia; Aligarh Muslim University; Delhi University South Campus.
- 4. Session chair at APMC 2016, IMaRC 2016, NCC 2017, and WECON 2016.

- 5. Organizing Committee Member IEEE APMC 2016, and Finance Chair IEEE MTT- S IMaRC 2016.
- 6. Member of various committee in SSPL-DRDO as a Subject Matter Expert.

### Ojaswa Sharma

- 1. Reviewer for ICVGIP 2016 conference
- 2. Keynote talk on "Computing in Graphics and Beyond" delivered at the National Symposium on Computing, Analytics and Networks (NCAN) held on April 15 2017.

### P B Sujit

- 1. Editor to Journal of Intelligent Robotic Systems
- 2. Associate Editor for International Conference on Unmanned Aerial Systems
- 3. Reviewer for IEEE Transactions on Cybernetics, IEEE Transactions on Control Systems Technologies, IEEE Transactions on Aerospace Electronics Systems, Control Engineering Practice, Ocean Engineering,
- 4. Reviewer for ACC, CDC, IROS, ICRA, HRI, SMC conferences

### Ponnurangam Kumaraguru

- 1. Program Committee Member WWW 2017
- 2. Program Committee Member ICWSM 2017
- 3. Co-Organizer for Security and Privacy Symposium. Attended by 100+ participants, including faculty / researchers, and students from all around India. 10 11 Feb, 2017. See Figure 2.
- 4. M.Tech. Thesis examiner, JIIT, May 2017
- 5. ACM Distinguished Speaker. April 2016 Present.

## **Pushpendra Singh**

- 1. Reviewer for CHI 2017 (Core A\*)
- 2. Reviewer for IEEE Transactions on Mobile Computing
- 3. Reviewer for IEEE Access
- 4. TPC member of IEEE LCN (Core A)

### Pydi Ganga Mamba Bahubalindruni

- 1. Golden Reviewer of IEEE journal Electron device letters
- 2. Reviewer of IEEE transactions on circuits and systems
- 3. Reviewer of ISCAS

#### **Rahul Purandare**

- 1. Served as a PC member for
- ICSE Tools Track 2017
- COMPSAC 2017
- ICTAS 2017
- ISEC 2017
- ForMABS 2016

- ACM Compute 2016
- 2. Served as a reviewer for
- a. Springer's book on runtime verification (Editors: Ezio Bartocci and Ylies Falcone)
- b. TOSEM
- c. TSE
- 3. Joining Review Board of TSE
- 4. Served as an examiner for a Master's thesis student at IISc.

### Richa Singh

- 1. Associate Editor, IEEE Access, 2016 Present
- 2. Associate Editor, EURASIP International Journal of Image and Video Processing, SpringerOpen, November 2013 Present
- 3. Editorial Board Member, Information Fusion, Elsevier, November 2011 Present
- 4. Education Committee, IEEE Biometrics Council, January 2012 March 2017
- 5. Conference Committee, IEEE Biometrics Council October 2011 March 2017
- 6. General Co-Chair, IEEE International Conference on Identity, Security and Behavior Analysis, New Delhi, India, February 2017
- 7. Program Committee Co-Chair, IEEE International Conference on BTAS, Bu\_alo, USA, September 2016
- 8. Area Chair, IAPR International Conference on Biometrics, Halmstad, Sweden, June 2016
- Technical Program Committee Member
- British Machine Vision Conference, London 2017
- IEEE Conference on Computer Vision and Pattern Recognition, 2017
- IEEE International Conference on Image Processing, 2017
- International Conference on Computer Vision, 2017
- CVPR Workshop on Biometrics, 2017
- IEEE/IAPR International Joint Conference on Biometrics, 2017
- Asian Conference on Computer Vision, 2016
- International Conference on Pattern Recognition, 2016 Events Organized
- LivDet Liveness Detection Competitions, with IEEE/IAPR The International Joint Conference on Biometrics, 2017
- IEEE Winter School of Machine Learning in Biometrics, February 2017
- IEEE International Conference on Identity, Security and Behavior Analysis, New Delhi, India, February 2017
- IEEE International Conference on Biometrics: Theory, Applications, and Systems, Bu\_alo, USA, September
   2016

#### **Saket Anand**

- 1. Reviewer for Elsevier's Pattern Recognition
- 2. Reviewer for IEEE Access
- 3. Reviewer for IET-Computer Vision, Special Issue on Animal Biometrics

### Sambuddho Chakravarty

1. Served as external M.Tech. Thesis examiner for Mr. Md. Saood and Ms. Yamini Agarwal who were students of Dr. Vinay Riberio (IITD).

Thesis titles - IOT for Home Automation (Md. Saood, IITD) - Advisor: Dr. Vinay Riberio

Enhanced Autoencoder for Robust Classification and Detection of DDoS Attacks (Yamini Agarwal, IITD) – Advisor: Dr. Vinay Riberio

### Sanjit Krishnan Kaul

- 1. Reviewer for PIMRC, ISIT, IEEE Transactions on Information Theory, Mobihoc, IEEE Communications Magazine, IEEE WCNC, and etc.
- 2. TPC of Network Traffic Measurement and Analysis Conference (TMA 2017)

#### **Shobha Sunder Ram**

- 1. Associate Editor, IEEE Trans. Aerospace and Electronics Systems (ongoing)
- 2. TPC and Session Chair, 2016 Asia Pacific Microwave Conference
- 3. Treasurer, IEEE MTTS- Delhi Chapter
- 4. Reviewer for IEEE Trans. Aerospace and Electronics Systems, IEEE Trans. Antennas and Propagation, IETE Journal of Research

### **Sneh Saurabh**

- 1. Editor: IETE Technical Review [Impact Factor: 1.304]
- 2. Reviewer

IEEE Journal of the Electron Devices Society

**IEEE Transactions on Nanotechnology** 

**IEEE Transactions on Electron Devices** 

#### **Shriram Venkatraman**

1. Acted as an ad-hoc Reviewer for 3 international journals and 5 well known management and design conference papers (Academy of Management, Interact)

### Sujay Deb

- 1. We (with Ph.D. student Hemanta and Harsha) delivered a half-day tutorial at VLSI Design Conference 2017
- 2. Our Mini-symposia proposal on BP estimation techniques has been accepted at 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2017.
- 3. TPC member of VDAT 2017, iNIS 2017.
- 4. Reviewer of TC, TVLSI, TCAD, JETC, SUSCOM etc.

#### **Sumit J. Darak**

- 1. Organized special session on "Sub-Nyquist Sampling for Green Radio" at URSI-GASS 2017 in Montreal, Canada
- 2. TPC member: IEEE ANTS, IEEE ICACCI
- 3. Journal reviewer: IEEE TVLSI, IET Communications, Journal of signal processing, ISCAS, China communications, Journal of Communications and Information Networks (JCIN), National Academy of Sciences (NASA)
- 4. Conference reviewer: ICECS, ANTS, iNIS, ISWCS

### **Tavpritesh Sethi**

1. Served as a reviewer for journal articles (Journal of Translational Medicine)

### **Vikram Goyal**

- 1. PC member: COMAD 2017, ICISS 2016, ICDCIT 2017, IC4S 2017, SSIC 2017, RS 2017, PABS 2017, IoT4TD 2017
- 2. Reviewer: Transactions of Services
- 3. Member of Screen Committee of Program ICPS, DST
- 4. Reviewer of DST, SERB Project Proposals

### Vinayak Naik

- 1. A reviewer of ACM SIGCOMM CCR, 2017
- 2. A member of the Advisory Technical Program Committee for INFOCOM, Honolulu, HI, USA, April 15 19, 2018
- 3. A reviewer of ACM on Interactive, Multimedia, Wearable and Ubiquitous Technologies (IMWUT), 2017
- 4. A co-organizer of WiFi Knowledge Summit, New Delhi, India, September 30, 2016
- 5. A program committee member of International Conference on Computing, Networking and
- 6. Communications (ICNC 2017), San Francisco, USA, January 26-29, 2017
- 7. A program committee member for The 8th IBM Collaborative Academia Research Exchange ICARE 2016
- 8. A program committee member of Tenth IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS'16), November 6-9, 2016, Bangalore, India

#### Vivek A Bohara

- 1. Reviewer for IEEE Transaction on Wireless communication, IEEE Transaction on communication, IEEE Transaction on Vehicular Technology, IEEE Globecom etc.
- 2. Technical program committee member for conferences such as IEEE PIMRC 2016, IEEE PIMRC 2017, ICACCI 2016 and IEEE Tensymp 2017.

## **Vivek Kumar**

- 1. Web chair in PPoPP 2016 conference
- 2. PC member in IA3 workshop (http://hpc.pnl.gov/IA3/IA3/Call\_For\_Papers.html)

## **Appendix I: Students Achievements**

#### **Professional Services**

- Hemanta Kumar Mondal (Ph.D.: Student, IIITD) and GNS Harsha (Ph.D.: Student, IIITD) presented a very well attended tutorial at 20th International Symposium on VLSI Design and Test (VDAT 2016).
- 2. Nipun Batra was a part of the steering committee and Technical Program Committee in conference.
- 3. Manoj Gulati and Milan Jain were a part of the Technical Program Committee in conferences.
- 4. Haroon Rashid (Ph.D. Student), delivered a talk on "Time-series Forecasting" at National Institute of Technology, Srinagar. His talk was a part of 10-day workshop on "Big Data Analytics" training programme sponsored by DST
- 5. Two students from IIIT-Delhi, Taneea S Agrawaal and Divam Gupta, were invited for a day-long workshop at Google India headquarters in Bangalore.
- 6. Taneea S Agrawaal was invited to attend the Women Techmakers summit in honor of International Women's day
- 7. Arushi Jain, selected by Microsoft Research as a research fellow to work with the Applied Machine Learning team.
- 8. IEEE Student branch of IIIT-Delhi organized a tutorial on Linux WiFi Subsystems led by Ms. Dheryta Jaisinghani, a Ph.D. student at IIITD.
- 9. IIIT-Delhi students and Google Anita Borg 2016 scholars Juhi Bhatnagar, Soumya Sharma, and Srishti Sengupta facilitated a Google-sponsored workshop "Applied Computer Science with Android".
- 10. The meeting started with a programming workshop to teach Ruby on Rails led by Ankur Singh, Arushi Jain, Shuchita Gupta, Taneea S Agrawaal, Srishti Sengupta and Vrinda Malhotra held workshop for Rails Girls.

### **Awards/ Scholarships and Grants**

- 1. Akshay Sethi, a fourth year B.Tech student working with IAB Lab has received the best poster award of all summer interns at IBM Research.
- 2. Paper by Samarth Bharadwaj, Tejas Dhamecha Received the Highest Impact Award at 11th CVPR Workshop on Biometrics 2017.
- 3. Ankita Verma and Stuti Goel for secured top rank in Google Code Jam to I/O 2017 for Women. Both of them will get a chance to attend google I/O at Googleplex, Mountain view.
- 4. Himani Joshi (Ph.D. student, IIIT Delhi) has received 2017 NI (National Instruments) Academic Research Grant (\$2000) for her research proposal.
- 5. Gurshabad Grover, From the class of 2017, received Prestigious LAMP Fellowship. We are proud of our students.
- 6. Sonia Soubam, received the IBM Ph.D. Fellowship Awards.
- 7. Arushi Jain, a graduating student has been selected by Microsoft Research as a research fellow.

- 8. reached the finals at Association for Unmanned Vehicle Systems International Student Unmanned Aerial Systems (AUVSI SUAS) Competition held in USA.
- 9. Team 'Captain Planet' (Dr. Alex, Amogh, Anupriya, Himani, Nipun, Puneet) of IIIT-Delhi has reached to the top three of Hackathon during Microsoft Research Internet-of-Things (IoT).
- 10. Ishant received grant from Google & XRCI to present in CVPR2016.
- 11. Soumyadeep Ghosh(Ph.D. scholar), Surabhi Garg(Ph.D. scholar) have been awarded TCS fellowship under TCS Research Scholar Program.
- 12. Design by Sri Harsha Gade (Ph.D. student), Akash Aggarwal(CSE BTech 3rd yr), Lakshit Tyagi (CSE BTech 3rd yr) & advisor: Dr. Sujay Deb, won the VLSI Design Contest 2017.
- 13. Paper co-authored by A. Maktoomi (Ph.D. Graduate), A. Yadav (B.Tech. Graduate), M. Hashmi (Faculty-IIITD), and F. Ghannouchi (University of Calgary) received the best paper award (2nd position) in the 59th edition of IEEE Midwest Symposium on Circuits and Systems.
- 14. Indira Sen (M.Tech. 4th semester) & Kushagra Singh (B.Tech. 6th semester) won the Second Prize in Tool contest at International Conference on Natural Language Processing (ICON) 2016.
- 15. Manoj Gulati has been selected for the prestigious 'Building Energy Efficiency Higher & Advanced Network (BHAVAN)' Fellowship Program supported by the Department of Science and Technology, Govt. of India, and the Indo-U.S. Science and Technology Forum (IUSSTF).
- 16. Ambar Pal, B.Tech.(CSE) 3rd year student has been selected for The Viterbi India Program.
- 17. Sri Harsha Gade (Ph.D. student), Akash Aggarwal (CSE B.Tech. 3rd year), Lakshit Tyagi (CSE B.Tech. 3rd year) and Sujay Deb (Faculty advisor IIITD), paper titled "A Floorplanner Framework for Physical Design Space Exploration of SoCs and CMPs", has won the VLSI Design Contest 2017.
- 18. Yashovardhan Sharma selected for SN Bose scholarship Program.
- 19. Aman Agarwal received Berkley Scholarship to NYU's MBA program.
- 20. Hemank Lamba (B.Tech., graduated in 2012, inaugural batch of IIIT-Delhi) receives Carnegie Mellon University Presidential Fellowship for 2016 2017.
- 21. Dhruv Pargai, B.Tech received a 1000\$ scholarship from the Berklee college music for the fiveweek summer program.
- 22. Team from IIIT-Delhi participated in Asian Youth Leaders Travel and Learning Camp and won "Most Creative Award" for their presentation.
- 23. IIITD team participated in Olympiads in Informatics, 2016, Russia.
- 24. Lokender Tiwari received the best doctoral symposium award (third position) for in 10th Indian Conference on Computer Vision, Graphics and Image Processing.
- 25. d4rkc0de (Aneesh Dogra, Gurshabad Grover, Palash Bansal and Sambhav Satija) secured second runners up spot at the finals of the Indian leg of CSAW CTF organised by NYU Tandon School of Engineering held at IIT Kanpur!

### **Technologies Developed**

- 1. Aditya Jain working on a project called as GIS (Geographic Information System) Mapping under the guidance of Dr. P.B. Sujit have mapped the entire campus of IIIT-Delhi using a DJI Phantom quadcopter (drone).
- 2. Prerna Agarwal and Richa Verma, under the guidance of Dr. Angshul Majumdar have designed a portal called FlickScore for collecting movie ratings for Indian movies.

#### **Publications**

- 1. Two poster presentations at 2017 International Joint Conference on Neural Networks IJCNN, Anchorage, Alaska!
- 2. Shiju got paper published in PLOS ONE open access journal on 9-May-2017.
- 3. Hemanta Kumar Mondal got his paper published in IEEE explore
- 4. Ankita Likhyani's paper accepted for publication in IJCAI.
- 5. Paper by Parag Aggarwal got accepted in IEEE Wireless Communications Letters.
- 6. Alvika Gautam's paper accepted as a full paper at 20th IFAC World Congress 2017
- 7. Hemanta Kumar Mondal presented his research work at Doctoral Symposium, in Design, Automation and Test in Europe (DATE) 2017, Lausanne, Switzerland"
- 8. Paper by Milan Jain accepted in UbiComp 2017
- 9. Paper by Siddharth Dawar , Veronica Sharma accepted for publication in the Applied Intelligence Journal.
- 10. Paper by Gaurav Goswami accepted in IEEE Transactions on Information Forensics and Security
- 11. Paper by Naman Gupta, Anmol Singh accepted in VHCIE@IEEEVR201
- 12. Paper by Siddharth Dawar accepted for publication in the Applied Intelligence Journal. of
- 13. Wazir Singh presented his paper at ISQED-2017
- 14. Naushad Ansari, presented his paper at conference DCC 2016
- 15. Deepika Yadav presented her work in the field of HCI, at conference of ACM SIGCHI 2016
- 16. Parag Aggarwal, presented a paper at IEEE International Conference on Communications
- 17. Five paper presented at 3rd NILM workshop held in Vancouver, Canada
- 18. Two papers accepted to be published in ISCAS 2017
- 19. Ayushi Rastogi presented paper at Innovations in Software Engineering (ISEC'17)
- 20. Venkatesh Vinayakarao presented the paper in The Tenth International Conference on Web Search and Data Mining (WSDM'17).
- 21. Two Student papers accepted at the 23rd National Conference on Communications NCC 2017
- 22. Monalisa Jena presented at COCOA 2016' at Hong Kong SAR, China.
- 23. Paper by Deepika Yadav and Deepak Sood presented at World Wide Web (WWW) Conference, 2017
- 24. Ayushi Rastogi presented at 27th International Symposium on Software Reliability Engineering.
- 25. Abhishek Kumar (Ph.D student, IIIT-D) presented his work at Inscrypt 2016
- 26. Ankita Shukla published and presented at ICIP 2016, held at Pheonix, Arizona, USA
- 27. Paper by Venkatesh Vinayakarao got accepted for publication in Tenth International Conference on Web Search and Data Mining (WSDM'17).
- 28. Lokender Tiwari presented his paper in the IEEE International Conference on Image Processing.
- 29. Arpita Gang presented at conference INTERSPEECH, held in San Francisco
- 30. Two papers from were presented as poster in IEEE Workshop in Hyperspectral Image and Signal Processing held at Los Angeles

# **Appendix J: Student Clubs**

"Summary Report of Student Clubs Activities for 2016-17"				
Club	Focus Area	Activities		
Adventure Club	Adventure	Pokhara Trip		
Astronuts Club	Astronuts	Introductory session, First Session, Nehru Planetarium, Hands of Telescope and Moon Observation, Super Moon Observation, Astroport visit		
AudioBytes	Music	Convocation Day, Foundation Day plus Teachers Day, Eid Celebrations, Independence Day, Republic Day, Fresher's Night, Alumni Meet, Karaoke Night, Talent Night, IIT Rendezvous Talent Night, Singing (10), Piano class (6), Vocal and Guitar sessions (6). Initiatives as Acoustic Guitar, Indian Classical Vocal Classes, Drums Classes, Music Instruments Repair, Member achievements: 1st position in Dyal Singh category College (Hindustani Classical vocal solo), in Sri Venkateswara college (Semi-classical vocal solo), in Shaheed Bhagat Singh college(Semi-classical solo). 2nd position in Hansraj college(Semi-classical solo)  3rd position in Kirori Mal college(Semi-classical solo), in Miranda House(Semi-classical solo)		
Trivialis	Quizzing	Quizzing like General, Literary and Poetry, PopCult, Delhi, Sports, Pop culture, India Quiz, Sherlock & GOT quiz, Mela Quiz, Intra Quiz, Music Lit Ent, Movie/TV, BigBang & Friends, and General during ESYA, Freshers party, Orientation & Cadence. Organized Bi-annual and On-line Quizzes		

FooBar	Programming	Programming Workshops as INOI workshop for school students, Introduction of Foobar Elite other events: ProSort (12), CodeClass (8) , Esya's ProCon 2016, Induction Contest, Participated in ICPC: Programming Contest(3 Regional Sites(Amritapuri, Kolkata, Chennai), 16, 6, 9 Teams respectively), Codechef's February Long challenge. FooBar Contest Portal. Participated in Snapdeal Hackathon, JIIT Codeflux, Shivaji Techfest, DUCS Sankalan, BVP Techfest. Members have participated and won 624th global rank in the highly competitive and prestigious Facebook HackerCup Round 2. Others like IndiaHacks and ICPC Preparatory Series by IPC, 76th global rank in Google Code Jam To I/O for Women, winning a ticket to Google I/O 2016, 2nd rank in India, and the 14th rank globally out of 5000+ participants in Codechef's February Long challenge.
BYLD	Software Development	Organized Hackathon (8), Scripting Challenge (5), HackEve/HackNight (16) like Docker, Anonymity on web using Tor, Automation scripting using Ansible), Tech Talk (4), Developer Accounts, Byldathon (1), Tech Talks, GSoC Talk QnA, CTF FB DevC
Rang Club	Painting	Cartoon Strip Making, 50 Shades of Evil, Rangoli, Phone Cover Designing, Photo frame making, Pictionary, Delhi Mini Maker Faire, Photowalk, FOQS (Esya), Made the Foundation Day Thank You Wall(opposite lift in acad building) made and a creative session held for Rang members. Art-a-Thon, Photo Recreation, Madhubani Paintings and Poster making.
Machaan	Dramatics	Lip sync battle, Actitout, Dub-Me-In, Machaan visit to Mandi house Stage Play for teacher's day celebration, Street Play prepared- Pehchaan and it's video was shot for prelims for inter college fests, Mime act prepared for Republic Day. Mono act competition in Odyssey 2017 Skit competition
Ink	Design Club	Drishtikon: Honest posters, Ink Tang VIII to X, Ink Thing Back to Basics, Celebrate and Welcome New Members at Ink. Out, Cadence, ESYA, Brochure, Institute handbooks, Alumni Year book & Farewell mementos. Ink Tank (7), Minimal Design, Ink Spot

Game Craft	Game Development	Unity Introduction, First Hackathon, Virtual Reality in Unity, Game Dev Workshop, Level Design Competition, Complete Game Dev, Texturing Competition, FIFA Frenzy, Research Showcase. Other work was Game Development for mobile, Using Buildbox to create levels, Using Buildbox to make publishing-ready games, Publishing game to the app store, Monetizing games, Association with Virtual Campus, Making Photorealistic Environments, Texturing in Substance Painter, Basics of Unreal Engine (4)., Lighting in Unreal Engine (4)., Playing and Setting up Virtual Reality in Unreal Engine (4). Both 2D and 3D game design
MadToes	Dance	Participated in Hip Hop Workshop, Independence Day Celebration: 8, Auditions: 40, Dance classes (8 sessions): Participants~50 Each, Lesson by Choreographer: 15: 12, NSIT Moksha Prelims: 12
Tasveer	Photography	Digital Photography Workshop, FOQS(Esya'16), Photowalk , Sept'16: Rashtrapati Bhawan, September'16: Old delhi Tasveer members are a part of the Media Panel, Tasveer covers all the institute events (including cultural and sports events)
The 65thSQUARE	Chess	Intro to Unity, Chess Sessions involving puzzle solving, practice play, a few opening/endgame techniques and preparation for Spardha, Intra competion
The Philosophy Society	Philosophy	Panel Discussion on Excursion/picnic/museum visit, Weekly meetings among Lunchbox Philosophers.

Voix Literati	De	Public Speaking, Reading Writing	&	Fresher's Debate, Poetry, Group Discussion on Police Reforms, Independence Day Panel Discussion, Bookmeets, Online Haiku Writing Competition, Online Limerick Writing Competition, Movie Marathon- Hunger Games, Jaipur Literature Festival Trip, Poetry Recitation (In collaboration with Audiobytes), Grammar Nazi Bookmeets, Online short story writing 16 Words To Go (Pre-Cadence event), Just A Minute (During ODYSSEY'16), Terribly Tiny Tales Competition (In collaboration with TEDxIIITD) Republic Day Speech, Midnight Meetings, Bring Your Book, Lit-Talk, Lit-Nights like open mic nights where people can read their own other people's work out loud. Honor of being an editor at Icy Tales, a blog website, article was published in The Education Times.
Eco Club		Cleaning Awareness	&	Cleaning drives at nearby areas of IIITD (9), E waste Drive, Goonj Drive (3), Collection Drive, SOHF Swachh Mela,Swatch Bharat Abhiyan
Cultural team		Culture		Celebrated Foundation Day, Independence Day, Republic Day, Lohri, Dandiya, Eid, Neon Party, MUN, Diwali, Rangoli, Odyssey, Halloween Party, The Night and TEDxIIITD.
Sports Committee	9	Sports		Conducted full-fledged Sports meet Triquetra (with DTU & NSIT), Participated in IIIT sports meet "Twaran" at Gwalior, Spardha at IIT BHU, Participated at NSIT & IIM-Indore sports meet, Organized Intramural tournament at IIITD.