# Annual Report 2013-14

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# 1) Executive Summary

Since its creation in 2008 through an act of Delhi Government empowering it to do research and grant degrees, in six short years IIIT-Delhi has come a long way. We currently have over 1000 students in our B.Tech, M.Tech, and PhD programs, and continue to attract and retain high quality faculty – the single biggest challenge in academia in India. Our regular faculty strength has now crossed 40, all holding PhDs from prestigious institutions from across the world, mostly from US and Europe.

Research remains the key focus of the institute. Our faculty members and students have published over 100 papers in international journals and conference proceedings this year alone. Some of the papers have been acclaimed and have received Best Paper and Poster awards in prestigious National and International conferences. Many of our PhD students have been selected for prestigious research grants and fellowships such as the Prime Minister's Fellowship, IBM Fellowship, and TCS Fellowship. Four of our young faculty members are the proud recipients of the DST's Inspire fellowship, while another one has been honored with Adobe's Excellence in Research Award. This year 17 research proposals from our faculty were approved for funding by various agencies for a total commitment of over Rs. 3 crores.

In our R&D efforts, we remain committed to developing technologies that can be transferred for commercial exploitation or use by other organizations. This year over two dozen tools and technologies were transferred to over ten organizations. Three start-ups based on technologies and tools developed at IIIT-Delhi have emerged – one in the area of energy management, one in education, and one in social networking.

This year we also achieved a major milestone. We awarded our first two PhDs to Kuldeep and Himanshu Bhatt, thus graduating students in all three higher education degrees – Bachelor's, Master's and Doctorate in a short span of six years. Both received good reviews for their thesis, from the examiners who include some international experts. During the PhD, Kuldeep was awarded the prestigious Microsoft PhD fellowship, which is given to only five students every year in India, and Himanshu received the coveted IBM PhD fellowship. Both are now working in Xerox research.

To consolidate our research and make a stronger impact in targeted areas, our vision is to start research centers in focused areas. In January 2014, we opened our first Centre of Excellence in cyber security, aimed at imparting high-level education, technical training and research in this critical area which will help various stakeholders like the government, industry and general public. The center was inaugurated in January by Dr Gulshan Rai, Director General of CERT-In (Computer Emergency Response Team-India). Cyberspace management and cybersecurity have been identified by the PM as key emerging issues and core areas of focus. IIIT-D remains committed to engaging with science also as a problem solver and as a social good.

While our faculty members collaborate with colleagues across the world, we have also initiated some formal international collaborations. We have started a joint PhD program with Australia's Queensland University of Technology (QUT), signed a Memorandum of Understanding with the University of Nebraska-Lincoln (UNL) to facilitate academic collaboration between the two institutions, and inked a pact with the Graduate School of

Information Security (GSIS), Korea University, Seoul for joint projects, joint supervision of doctoral students, organizing joint academic and scientific activities etc.

Key Highlights (Infrastructure) :

- Phase I of the permanent campus of IIIT-D became operational in August 2012, with over 30,000 sqm of space, sufficient for about 1000 students and 50 faculty members.
- The proposal for Phase-II of the construction has been approved by the Delhi government, which will add another 60,000 sqm of building space to cater to a total of 2,500 students and 125 faculty members.

We continue to focus on effective resource utilization and have installed smart electricity meters which show energy usage in a dashboard. Other measures are also been taken for more efficient use of energy and water resources. Solar panels have been installed which help us in integrating renewable sources of energy to fulfill the energy requirements of the institute.

After the successful placement of the first two batches, the batch which has just graduated continued the tradition of a strong performance in placement. In a short span, and despite being a young institutive the university is proud to attract companies like Google, Microsoft, Xerox Research, Amazon, Adobe, EMC, etc. Some other international companies have also recruited from IIIT-Delhi. By most measures for placement– highest domestic salary offered, the highest overseas package offered, percentage of students placed, mean and median offers – we compare favourably with the top institutions in the country. Almost 10% of the graduating BTech batch got fellowships for higher studies in top institutions in the world – a very fine record.

Overall, we have had a very good year, and are well on our path of becoming a globally respected and recognised institute. Though many challenges remain, we are confident of addressing them in the coming years with the support of students, faculty, administration, and other well wishers.

# 2) About Us

#### 2.1 Establishment / History

Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi or IIIT-D) as it is now popularly known as, 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 on April, 2008 and started its academic programs the same year. The institute began with its first batch of 60 B.Tech students in 2008. Since then, it has come a long way with nearly 40 faculties specializing in diverse areas of Computer Science and Electronics & Communications Engineering, and more than 500 students in B.Tech, M.Tech and Ph.D. In a relatively short time, it has earned a good reputation in India and abroad for being a center of quality education and research in IT and allied areas.

Indraprastha Institute of Information Technology Delhi is an Institute of higher education, with a strong focus on Education as well as Research and Development. It is an autonomous Institute, with the Board (current Chairman: Mr. Kiran Karnik, who is ex-President, Nasscom) fully empowered 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.

#### 2.2 Our Mission & Vision

The Institute's stated mission is to be a global centre 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.

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
- Offers relevant, contemporary & holistic UG and PG programs
- Is linked globally, Industry-facing, socially relevant

#### 2.3 Campus

The Institute's permanent campus in Okhla became operational in August 2012, before which it was functioning from NSIT, Dwarka. Phase-I of construction of IIIT-D's permanent campus saw:

- utilization of 30,000 sqm of building space for its functioning, including
- A Faculty and Research block for 50 faculty members
- Eight research centres

- Three big lecture halls with a total capacity of 500,
- Two lecture halls can accommodate a total of 120 students
- Five smaller ones with an overall capacity of 150
- Recreation centre
- Boys' hostel
- Girls' hostel along with playing areas; and
- Service block

# The proposal for Phase-II of the construction has been approved by the Delhi government, which will add another 60,000 sqm of building space to cater to 2,500 students and 125 faculty members.

With energy conservation at its core, smart electricity meters have been installed at the buildings in the campus to study the power consumption pattern so that attention can be paid to saving electricity and utilizing it in a proper manner.

IIIT-D has a world class, campus-wide state of the art information technology tools that are designed to meet the computing and communication needs of the institute. It is equipped with a fast, reliable and rugged computer network of more than 500 Nodes. The institute has issued more than 100 laptops to its faculty, staff and Ph.D. students. In order to facilitate proper teaching aid, all classrooms here are equipped with multimedia capability including projectors and audio systems.

All the hostels, faculty blocks, administrative block, library, classrooms and residences, are connected through a redundant 10 gigabit fibre backbone network. All the blocks are connected through layer 2 & 3 switches to provide 1Gbps connectivity at the user end. Every hostel room has a dedicated LAN connection to provide round the clock access to e-resources on the net. A wireless network with 92 access points has also been enabled in the faculty block, library, classrooms and hostels.

	Sh. Najeeb Jung Hon'ble Chancellor of the University	Other Members: Sh. Kiran Karnik, Chairman, Board Dr. Avinash Chander Sh. A Mohan Dr. Rajiv Sharma Sh. R Chandrashekhar Sh. R. K. Verma Sh. T Ramasami
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#### 2.4 Chancellor and General Counsel

#### 2.5 Board of Governors

A-		Other Members:
1954	Sh. Kiran Karnik, Chairman,	Sh. Ajai Chowdhry
Val	Board	Sh. Arun Seth
		Sh. S. Mahalingam
		Prof. Narendra Ahuja
		Prof. Pankaj Jalote, Director
		Sh. Pramath Raj Sinha
		Sh. R. K. Verma
		Sh. M. M. Kutty

#### 2.6 Administration

Prof. Pankaj Jalote Director & Professor	Dean Academic Affairs	Dean Student Affairs	Associated Dean (IRD)
Sh. Arun Verma General Manager (Operations)	Sh. Sanjay Roy Chief Engineer	Sh. Kapil Chawla Controller of Finance	Sh. Ashwani Kansal Registrar

#### 2.7 Infrastructure

Indraprastha Institute of Information Technology was set up by an act of the Delhi government, 2007. It endowed the establishment and incorporation of a non-affiliating and teaching institute in Delhi to facilitate and promote studies, research, incubation and extension work in Information Technology and its application domains, and also to achieve excellence in these and connected fields.

With the above objectives in view, the Government of NCT of Delhi allocated 25 acres of land in the GB Pant Polytechnic Campus to enable the setting up of the IIIT-D permanent campus, which is located behind the Govindpuri Metro station in Phase III of the Okhla Industrial Estate.

#### Way Forward: Phase II Construction

The IIIT-D campus that is spread out over the sloppy terrain in Okhla phase-III has been planned to be constructed in three phases. The proposal for Phase-II for construction of another 60,000 sqm of building space to cater to the requirements of 2,500 students and 125 faculty members has received the approval of the Government of the National Capital Territory of Delhi. The Architects have been appointed for the purpose and plans submitted to local authorities for approval. The Project Management Consultants are also being hired, and the on-site construction would commence soon after we get all the clearances. The construction of the core academic area is expected to be completed and put to use in the academic session of 2016.

Earlier, the first phase of the construction covered an area of 32,500 sq m consisting of an Academic R & D block, a lecture hall block, a Library-cum-Information Centre building, a Dining Block, a Boys Hostel, a Girls Hostel, Faculty Residences, Service Block, 2 STPs and guard rooms.

# 3) Education

#### 3.1 Current Academic Programmes

The institute offers undergraduate programs in two main areas leading to B.Tech degrees in CSE and ECE, M.Tech in general and specialized M.Tech. degrees in Mobile Computing, Information Security, Data Engineering, and VLSI & Embedded Systems and Communication and Signal Processing, as well as doctoral programs in IT and allied areas. The primary objective is to impart specialized trainings on the latest technological advancements in CSE and ECE domains.

Details of Students Admitted/Passed/Existing								
Programme	Specialization	Batch	Admitted	Passed	Existing	No. of students presently on Roll	Male	Female
	CSE	2010	100	81	04		60	25
	CSE	2011	120		112		87	25
	CSE	2012	120		132		79	53
B.Tech	ECE	2012	51		39		32	7
D.Tech	CSE	2013	124		121		90	31
	ECE	2013	47		43		36	7
	CSE	2014	124		124		107	17
	ECE	2014	48		48		44	4
Total No. of	B.Tech Students	on Roll	:			623	535	165
	CSE	2012	62	45	15		32	28
	ECE	2012	20	18	01		14	5
M.Tech	CSE	2013	78		72		31	41
IVI. I ech	ECE	2013	31		29		13	16
	CSE	2014	55		55		30	25
	ECE	2014	39		39		16	23
Total No. of	M.Tech Students	s on Rol	1:			211	136	138
	CSE	2009	6	2	4		6	0
	CSE	2010	7		7		5	2
	CSE	2011	10		10		5	5
	CSE	2012	17		16		8	8
PhD	ECE	2012	5		2		2	
	CSE	2013	22		18		8	10
	ECE	2013	11		9		7	2
	CSE	2014	8		8		6	2
	ECE	2014	12		12		10	2
Total No. of	PhD Students of	n Roll:				86	57	31
Total No. of	Students on Roll	:				920	728	338

#### 3.2 Student intake and total student strength

Average class XII Maths score for the new B.Tech batch 2013	: 94.36
Average class XII total score for the new B.Tech batch 2013	: 91.48

#### 3.3 Students Graduated

The Institute conducted its 2nd convocation on August 25, 2013, at its campus in Okhla. A total of 52 B.Tech and 33 M.Tech degrees were awarded at the event in the presence of Chief Guest, Prof. Dinesh Singh, Vice Chancellor of Delhi University; Shri Kiran Karnik, the Chairman of the institute's Board of Governors; and Prof Pankaj Jalote, the Director of the IIIT-D.



Figure 1 Graduating Students along with faculty members on Convocation day (25.8.2013)

	Upto 2012	Previous Year	Current Year	Total Passed till now	CGPA		No. of students graduated with Honors	
					8-10	6-<8	<6	
BTech(CSE)	51	52	81	184	33	44	4	5
BTech(ECE)								
Mtech(CSE)	22	32	43	97	20	20 14		
Mtech(ECE)			18		15	3		
PhD					2			
Dual Degree			2		2	-		

#### **Overall graduation data:**

#### 3.4 Courses Taught

During the past year, a variety of courses were offered to students both at UG and PG level. Summary of courses:

	Monsoon Semester	Average Enrollment	Winter Semester	Average Enrollment
CSE	35	53.71	26	59.24
ECE	7	34.14	9	26.11
Others	18	58.33	20	59.4
Total	60	52.82	55	53.93

# 3.5 Scholarship and Assistantship to students

# **B.tech. Students**

Batch	No. of students who got 25% waiver	No. of students who got 50% waiver			
BTech 2010	5	0			
BTech 2011	6	1			
BTech 2012	0	1			
BTech 2013	3	2			

#### M.tech. Students

Fellowship Head	2014 Batch	2013 Batch	2012 Batch	2011 Batch	2010 Batch	Total
Gates Scholarship	53	50	50	50	50	15

### Phd Students

Fellowship Head	2014 Batch	2013 Batch	2012 Batch	2011 Batch	2010 Batch	2009 Batch	Total
TCS		3	6	4	2		15
Prime Minister		1	1				2
UGC		1					1
Institute	16	14	5	2	2		39
Projects	2	7	2	1	2		14
Sponsored		1	3	2	1	2	9
In sixth year						2	2
Total No. of students	18	27	17	9	7	4	82

# 4) Research Development and Innovation

#### 4.1 Academic Research & Publications

We continue to encourage our faculty and students to publish their work in top quality international avenues. The list of papers published/accepted last year is given below in this section -30 in international journals, 81 in international referred conferences and 33 in International workshops. While this is the actual list, we have also obtained the publications data from Scopus and web-of-science for the period between 2009 and 2013. The detailed list of publications is given in **Appendix A**.

Year	No. of Publications		
	Scopus	Web-of-Science	
2009	9	8	
2010	29	13	
2011	31	8	
2012	54	29	
2013	92	46	
2014	17	8	
Total	232	112	

#### 4.2 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 33 technologies were developed which were transferred to 15 organizations /NGO's/ Community. Three start-ups based on technologies and tools developed at IIIT-Delhi have been started – one in the area of energy management, one in education, and one in social networking. The list of technologies & tools developed & deployed is given as an **Appendix B**.

#### 4.3 Patents

- United States Patent: 8489530 (July 16, 2013) System and method for root cause analysis of the failure of a manufactured product Assignee: Infosys Technologies Ltd
- United States Patent: 8468155 (June 18, 2013) Collaborative filtering-based recommendations Assignee: Infosys Technologies Ltd

#### 4.4 Sponsored Research Projects

Funding Agency	No. of Projects	Amount ('Lacs)
Department of Electronics & Information Technology	2	208.55
Media Lab Asia	1	128.60
Centre for Artificial Intelligence & Robotics (DRDO)	4	38.64
Scientific & Engineering Research Board (DST)	1	19.84
Max Planck Society, Germany (DST)	1	16.88
Department of Science & Technology (DST)	1	15.89
EMC Data Storage Systems India Pvt. Ltd.	1	9.60
National Thermal Power Corporation (NTPC)	1	9.00
Stanford University	1	7.91
Robert Bosch Engineering & Business Solutions Ltd	1	6.00
Adobe	1	5.00
Telecommunications Consultants India Ltd (TCIL)	2	5.00
Faculty Inspire Scheme – DST	1	35.00
VOX-FP & POL – United Kingdom	1	3.63
TOTAL	19	421.42

The summary of the projects approved last year by different funding agencies is given below:

#### 4.5 Incubation & Start Ups

Research and collaborative work at IIIT Delhi has resulted in four start ups; which are all currently at early stages. Three student ventures have gone or about to go commercial. The IIIT-D recognizes this as an opportunity to support innovation and social & technological entrepreneurship and is therefore working towards providing incubation facility. The three ventures are:

- Wiziters (anonymous social network): has attracted private investment but is not looking at incubation.
- Backpack (course management): wants to run out of campus is close to commercialization.
- In-gage (in-store customer feedback & analytics): may be interested in incubation facility; has got 2 paying customers.

It is therefore proposed to set up a facility for student and/or faculty ventures now with institute resources and simultaneously initiate a tie up with DST and DEITY for support.

# 5) Outreach & Professional Services

### 5.1 Conferences/Short Courses/Workshops organized in IIITD

IIITD organized many conferences, seminars, workshops, short courses in the past academic year and some of these are highlighted below:

Sl. No	Title of the Project	Duration of the Workshop	No. of attendees
1.	Training on Using online social media for Intelligence Purpose	30 August, 2013	35
2.	Cyber security Education and Research Centre (CERC)	23 January, 2014	150
3.	Work Shop on HL7	26 - 28 Feb, 2014	10
4.	CERC Seminar Series. Inaugural Seminar. "The Future of Interaction & its Security Challenges" by Dr. Sundeep Oberoi, TCS	25 Mar, 2014	150
5.	Computational Biology workshop	5 April, 2014	10
6.	Innovate Delhi	1 <sup>st</sup> – 22 <sup>nd</sup> June, 2014	150

#### 5.2 Participation of faculty in National & International Seminars & Invited Speakers

Our faculty members attended various National and International conferences and presented their research results, enhancing their academic and professional expertise. The detailed list is given in **Appendix C.** 

- Papers published / accepted in International Conference 45
- Workshop/Demos/Posters in International Conferences 33

#### 5.3 Distinguished Visitors & Invited Speakers

The aim of inviting distinguished visitors to IIIT-D is to provide opportunities to our faculty to strengthen collaborative research and enhance their visibility both in academia and industry. Many distinguished speakers from academia and the industry visited IIIT-D and this served as a venue for discussing research. Some of these distinguished visits are mentioned below:

• Dr. Utpal Bhattacharya, Indiana University: The Dark Side of Finance: (an overview of some of his research on financial markets and securities regulation) 5-Jul-13

- Dr. Ansuman Banerjee, ISI Kolkata: Counterexample ranking using mined invariants. 26-Jul-13
- Dr. Manik Varma, Microsoft Research India: Multi-Label Learning with Millions of Labels: Recommending Advertiser Bid Phrases for Web Pages. 8-Aug-13
- Prof. Subhashis Banerjee, IIT Delhi, Space-time super-resolution. 22-Aug-13
- Dr. Vijay Erramilli, Telefonica Research, Barcelona, Economic perspective to online privacy. 29-Aug-13
- Dr. Nalini Ratha, IBM Thomas J. Watson Research Center, NY: Privacy enhancement in Biometrics. 30-Aug-13
- Dr. Kishore Kothapalli IIIT Hyderabad, A Tale of Two Ruling Sets. 5-Sep-13
- Dr Ullas Nambiar, Lead Research Scientist & ACM Distinguished Speaker, EMC India COE, From Data to Decisions. 12-Sep-13
- Mr. Balkrishna Shetty, Ambassador of India (Retired): What is Mathematics? 19-Sep-13
- Dr. Santosh Srivastava, IBM IRL: System Immunology of T Cells.3-Oct-13
- Mr. Anadish Pal, Independent Inventor: "Philosophy of science in India would another renaissance originate from here?". 10-Oct-13
- Prof. M. Balakrishnan, IIT Delhi: Assistive Technology for the Visually Impaired. 17-Oct-13
- Dr. Swaprava Nath, ISI New Delhi: Mechanism Design for Strategic Crowdsourcing. 24-Oct-13
- Ms Usha Rangnani IPS Asst. Commissioner of Police: Safety of students. 9-Jan-2014
- Dr. Amit Sheth, Wright State University, USA: Transforming Big Data into Smart Data: Deriving Value via harnessing Volume, Variety, and Velocity using semantics and Semantic Web. 16-Jan-14
- Dr. Lipika Dey, Principal Scientist, TCS Innovation Labs: Signals and Sentiments from Text: New Age Enterprise Intelligence. 6-Feb-14
- Mr. Abhinav Chaturvedi and Mr. Akshay Damarla, Gradians Gradians.com, An Experiment in Qualitative Computer Aided Assessment. 13-Feb-14
- Dr. Subhadip Raychaudhuri, IIIT Delhi: How immune cells are activated and cancer cells get killed. 20-Feb-14
- Mr. Amit Sharma, Amitec Electronics Ltd: Software Defined Radio and Applications. 6-Mar-14

- Dr.-Ing. Jaleel Akhtar, IIT Kanpur: Microwave imaging and testing of materials and objects. 13-Mar-14
- Mr. Amit Saini, iCalibrator: Learning programming languages in a fully automated learning environment. 27-Mar-14
- Dr. Akhilesh Jain, Raja Ramanna Centre for Advanced Technology: High Power RF Amplifiers. 1-Apr-14
- Dr. Shweta Agrawal, IIT Delhi: The Good, The Bad, The Ugly. 3-Apr-14
- Prof. Don Gotterbarn: Application Oriented Computing, Computers & Society, Software Engineering. 9-Apr-14

#### 5.4 Professional Services

Our faculty members attended various national and international conferences and were Chair and members of various committees in National & International Conferences. Most of the faculty members are part of Editorial Boards and are also reviewers of various National & International Journals. The list is given in **Appendix D**.

•	Members of Program Committee in various National & Intl conferences	-	23
•	Members of Advisory Committee in various National & Intl conferences	-	03
•	Chair & Co-Chair in various National & Intl conferences	-	22
•	Editor of various Journals	-	08
•	Reviewer of various Journals	-	39

#### 5.5 Internships @ IIIT Delhi

The internship program at IIIT-Delhi continues to grow. Through this program, we not only give opportunities to students from other Institutions to work in IIIT-Delhi, we also allow some of our students to continue some project/research. This program also helps strengthen our PhD intake. It is also a part of our outreach initiatives and aligns with the vision to have an open campus which allows and facilitates greater community engagement. We continue getting support from Microsoft through their Rx program for supporting the interns.

This year a total of 90 interns worked in IIIT-Delhi. Out of these 44 were IIIT-D students, and 46 were students from outside [main: DTU (2), NITs (6) and LMNIIT (6)]

#### 5.6 Community Work

Community Work provides students a broader connect with society and the self. At IIIT Delhi, students are required to do a minimum 80 hours of Community Work. This activity teaches students about their rights, duties and responsibilities as citizens, and their ability to bring about meaningful change through advocacy and service. 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. Almost every student is involved with various NGOs all over the country. The institute also has a Community Work Club called Communitas - Opere, which organizes blood donation camps and facilitates student partnerships with NGOs. The list of all the NGOs with whom students have worked is given in **Appendix E**.

Sl No	Sector	No. of Students
1	Teaching	27
2	Promote rights of education	01
3	Data Collection, Entry and Case Study	15
4	Women Welfare	01
5	Old age home	03
6	Child rights	08
7	Under Privileged	02
8	Welfare of rural community	02
9	Community literacy programme	02
10	Blind Education & Training	01
11	Energy Consumption behavior	26
12	Handicapped Children	01
13	Fund collection for Orphanage	01
14	Others	16
	Total	106

#### Main areas of intervention are listed below:

### 6) Placements

#### **B.Tech. 2014 Graduating Batch Placement Statistics:**

- Number of B.Tech. students graduating in Year 2014: total 85 (80 from 2010 & 05 from 2009)
- Number of students registered with T&P (Training and Placement) Cell: 81
- Number of students who opted-out of placements (internship, dual-degree, higherstudy): 5
- Number of students secured a job [Percentage Placed]: 69(69/76 = 90.78%)
- Number of overseas offers: 16
- Number of India offers: 77 (Some students received multiple offers)
- Highest Salary (Overseas off campus recruitment, one job offer): Rs 60 lakh per annum
- Highest Salary (Overseas on campus recruitment, 16 job offers): Rs 33 Lakhs per annum
- Highest salary (India 2 job offers): Rs 19.75 LPA (Lakhs Per Annum)
- Average salary (excluding overseas, average of 53 offers): 7.28 LPA
- Minimum Salary (4 offers): 3.4 LPA
- Number of job offers equal to or above 10 LPA (out of 53 Indian offers): 6
- Number of job offer >5L PA: ?
- Number of job offers equal to or < 5L PA (out of 53 Indian offers): 47
- Number of companies visited campus (or conducted campus recruitment drive): 56

#### M.Tech. (2014 Graduating Batch) Placement Statistics:

- Number of M.Tech. students graduating in May 2014: CSE-59 & ECE-17
- Number of students registered with T&P Cell: CSE-54 & ECE-17
- Number of students who opted out of placements due to confirmed plans of PhD: 0
- Number of students who opted-out of placements (internship, dual-degree, higherstudy): CSE-15 & ECE-01
- Number of CSE students secured a job through T&P Cell [% Placed]: 39 (39 / 39 = 100%)
- Number of ECE students secured a job through T&P Cell [% Placed]: 07 (07 / 16 = 43.75%)
- Number of students unplaced = CSE 0, ECE 09
- Number of overseas offers: 07 CSE
- Number of India offers: CSE 46 & ECE 7
- Highest salary (overseas): 33 LPA
- Highest salary (India) (1 job offer): CSE 20 LPA
- Average salary CSE (excluding overseas offers and taking average of 31 Indian offers): 7.48 LPA
- Average salary ECE (excluding overseas offers and taking average of 07 Indian offers): 7.78 LPA
- Minimum Salary (3 offers): 3.75 LPA

- Number of job offers equal to or above 10 LPA (out of 38 (CSE-31+ECE-7) Indian offers): 04
- Number of job offers equal to or above 3 LPA (out of 38 (CSE-31+ECE-7) Indian offers): 34
- Number of companies visited campus: 56

# 7) Awards & Recognition

Our faculty and students have received several coveted awards for their papers and posters. Many have also been granted prestigious research grants and fellowships such as the Prime Minister's Fellowship for Doctoral Research and IBM and TCS Fellowships. Four of our young faculty members are the proud recipients of the DST's Inspire fellowship, and one has been honored with Adobe's Excellence in Research Award.

### 7.1 Faculty

- Amarjeet Singh has joined the Board Member for HISP India Governing Council
- Amarjeet Singh invited to be part of India Eminent Speakers program conceived by ACM India
- Amarjeet Singh was Co-chair, Comsnets E6 workshop
- Donghoon Chang along with Sumesh Manjunath, Somitra Kr. Sanadhya received the best M.Tech Thesis award of IIIT-Delhi, August 2013 for "Provably Secure Authenticated Encryption Modes"
- Donghoon Chang has joined Editorial Board Member of the Journal of Platform Technology JPT
- Donghoon Chang was Guest Editor of Special Issue "Advanced Mathematical Cryptography for Next Generation " in Journal of Applied Mathematics
- Mohammad Hashmi was Associate Editor for the special edition of "International Journal of Microwave Science and Technology" published in May 2013.
- Mohammad Hashmi received the Best paper award at IMPACT 2013.
- Mayank Vatsa & Richa Singh received two Best Poster Awards at IEEE International Conference on BTAS, Washington DC, USA 2013
- Mayank Vatsa is Area Editor, Journal of Information Fusion, Elsevier, Feb 14 Present
- Mayank Vatsa is Area Editor, IEEE Biometrics Compendium, January 2012 Present
- Mayank Vatsa was Program Committee Co-Chair, and Richa Singh was Publications Co-Chair, in International Joint Conference on Biometrics, Tampa, USA, Sept 2014
- Mayank Vatsa was Program Committee Co-Chair, and Richa Singh was Sponsorship Chair in International Conference on Biometrics, Madrid, Spain, June 2013
- Richa Singh was Guest Editor, Special Issue on Fusion in Biometrics, Information Fusion, Elsevier, 2014
- Richa Singh was Editorial Board Member, Journal of Information Fusion, Elsevier, July 2011 January 2014
- Richa Singh is Associate Editor, EURASIP International Journal of Image and Video Processing, Springer Open, November 2013 Present
- Richa Singh is a member of IEEE Biometrics Council, Education Committee, January 2012–Present

- Richa Singh is a member of IEEE Biometrics Council, Conference Committee, October 2011–Present
- Publications Chair, International Conference on Biometrics: Theory, Applications and Systems, Washington DC, USA September 2013
- Area Chair, International Joint Conference on Biometrics, Tampa, USA, Oct, 2014
- Session Chair, Biometrics Workshop, CVPR June 2013
- Ponnurangam Kumaraguru received Adobe Research Excellence Award for 2013–16
- Ponnurangam Kumaraguru was selected as one of the 11 ACM Eminent Speakers from the country by ACM.
- Ponnurangam Kumaraguru received Best Poster Award for 'Bitly can do better' along with Gupta N and Aggarwal A at Security and Privacy Symposium 2014.
- The company spun out of Dr. P.K's thesis Wombat Security Technologies () named as Top Tech Company to Watch in Pittsburgh; was Gold Winner of Information Security Product's Guide "Tomorrow's Technology Today" and Bronze Winner of Information Security Product's Guide "New Product Award"; was selected as a finalist for startup of the year for the Pittsburgh Technology Council's Tech 50 awards! In August 2013; and named 2013 Hot Company award winner by Network Products Guide.
- Pushpendra Singh developed "Trishulam", the woman safety app, was nominated among the top 5 for South-Asia wide Manthan awards.
- Pushpendra Singh's M-Voice, the integrated IVR services platform, was third among 400 applications for NASSCOM social innovation awards.
- Rahul Purandare received ACM Distinguished Paper Award for the ISSTA 2013.
- Vivek Bohara awarded 3<sup>rd</sup> prize for the poster "Fixed point indirect learning architecture for digital pre-distortion" in the research showcase 2014 at IIIT, Delhi

#### 7.2 Students

- Venkatesh Vinayakrao (Ph.D) received PM Fellowship
- Rahul Mishra (Ph.D) received ABB Fellowship
- Parikshit Maini, Alvika Gautam, Megha Gupta, Monalisa Jena,
- Mohona Ghosh and Hemant Kumar Aggarwal (all Ph.D scholars) received TCS Fellowships
- Wazir Singh (Ph.D) received UGC Fellowship
- Ayatullah Maktoomi (Ph.D) received Best Paper Award at IMPACT 2013
- Anush Shankaran (Ph.D) received best poster Award at BTAS 2013
- Gaurav Goswami & Samarth Bhardwaj (Ph.D) received Best Poster Award at BTAS 2013
- Raghav Sethi (B.Tech) awarded Best all-rounder student. Joined Masters in Princeton on full Scholarship.
- Mayank Pundir (B.Tech) awarded Chancellor's Gold Medal. Joined Masters in UIUC on full scholarship.
- Shilpa Garg (M.Tech) offered admission in PhD program at Cambridge Univ., MPI and other places. She has joined MPI.

# 8) Student Activities

#### 8.1 Sports

Students of IIIT-D participated in several tournaments in Delhi and outside Delhi. They were participants in the LSR invitational tournament from 25-27 October, 2013 and emerged winner of the team trophy in Lawn Tennis. IIIT-D students also took part in Twaran Sports Fest at Gwalior & achieved positions in almost all sports. Our basketball boys' team came out as winner, while we were runners up in Tennis, girls' Volleyball and in football, besides claiming four medals in athletics. In addition, IIIT-D participated for the first time in the Sports fest organized by NSIT Dwarka in March 2014.





In order to engage maximum number of students in sports, the first IIIT-D intramural was organized from 6-13 March 2014 in which a total of 246 students participated in different sports. A significant initiative from student's side was the inter-IIIT-D football tournament known as 'Joga Bonito', which was organized by the sports coordinator with the participation of 32 teams.

There were many occasions when IIIT-D invited other college teams for friendly/practice matches, including those from G.B. Pant Engineering College, College of Vocational Studies, Kirori Mal College, etc.

#### 8.2 Tech Fest – Esya

IIIT-Delhi organized its Tech Fest – Esya'14 on 22<sup>nd</sup> & 23<sup>rd</sup> Aug 2014, with an aim to build Esya as the platform for not only showcasing technical expertise and challenging the best in their fields but also at integrating technology with social causes. Esya is a journey, an adventure - *it is exploring Infinity and Beyond*. After four successful years that saw promising talents and immense reception, this year became bigger and better. Esya'14 broke all boundaries and 'explored the unexplored' in keeping with the essence of the name. The two day festival included a series of unique and challenging events to set abuzz the best brains in tech.. Esya '14 emerged as an unprecedented celebration of budding talent, technical excellence and innovative minds in CS and IT and saw participation from leading colleges.

#### 8.3 Cultural Fest – Odyssey

IIIT Delhi organized its 1<sup>st</sup> Cultural Fest "Odyssey" a two day fest on 31<sup>st</sup> January and 1<sup>st</sup> February, 2014 consisting of events ranging from dance, music, theater, art, literary and lifestyle. Adding to this, Euphoria, the popular indi music group performed at the festival on Nirvana Night on 1st February, permeating the campus with their earthy sounds, vibe and energy. The students worked hard as volunteers and participated with great energy and enthusiasm.

#### 8.4 Research Showcase

IIIT Delhi organized "Research Showcase" an annual two-day event on 11th & 12th April 2014, to showcase to the world, the research and development efforts of the students of IIIT Delhi. IIIT Delhi is a research led organization and continuous efforts are made to carry out research and development in information and software technologies, and in leveraging IT in specific domain areas. This vision is reflected in the course structure and general outlook of the students, leading towards several innovative ideas, projects and prototypes. These posters and demos include some recent innovations by various research groups at IIIT-D including Emerging Architecture & System Design, Image Analysis & Biometrics, Information Management & Data Analytics, Mobile & Ubiquitous computing, Security & Privacy, Software Engineering & Theory as well as outstanding course projects undertaken by students as part of their curriculum.

Research Showcase is intended for faculty of other institutes, industry professionals, media, students, parents and other tech-savvy visitors. We invite students and esteemed faculty members from various technical institutes all over India. It also serves as an open house where prospective students, recruiters, faculty and parents are encouraged to come and explore the campus and engage with the students and staff at IIIT-D.

Research Showcase brings forth the scholarly work of students at IIIT-D. Exhibits of realworld applications were made and an open discussion was held. Giving an opportunity to draw critical insights, and be a part of creative and intellectual activities. Faculty, staff, business and industry leaders came together for a day of collaboration and developing a deeper understanding as to how research adds value to the community and society.

#### 8.5 Student Clubs

Student clubs are the backbone of extra-curricular campus life. These clubs not only hone leadership skills but also help in instilling a team spirit and a sense of belonging. Several student clubs active in the institute enable students to enhance their talent in areas beyond academics. If some students want to pursue a hobby, they just need to find some like-minded people to start their own club. The entry and initiation barriers are kept low deliberately. To encourage more initiatives.

These clubs enable students to come together, share knowledge and mentor those looking to break into the field. IIIT-Delhi also has an Entrepreneurship Cell which nurtures budding entrepreneurs and supports promising start-ups.

Some of the clubs at IIIT-Delhi:

ASTRONUTS			Communities OpEre	Dramatis Personae Deser rockey & HIT Debit All the world's a stage
Astronomy	Music	Software Development	Community Work	Dramatics
Antha Prema	FooBar() (disset today)	MadToes	rodigious	इब्रवीba
Entrepreneurship	Programming	Dance	Paintings	Sightseeing & Delhi Heritage
Trivialis	THE 65 <sup>th</sup> SQUARE		GAME CRAFT	
Quizzing	Chess	Public Speaking, Writing, Reading	Game Development	

Other Clubs which have also been initiated are in the offing:

- 1. Adventure
- 2. Electronics
- Design
  Photography

#### 9) IIIT-D in the press: Spotlight

Our Institute's key developments made it to the media extensively, with its events like Research Showcase, Esya, Convocation and international workshop getting covered by various news outlets, along with articles on the innovative and interesting research work being carried out by its dedicated and focused faculty and equally talented students. Some of the prominent media organizations which have taken note of our achievements are The Times of India, The Hindustan Times, The Economic Times, Press Trust of India (PTI), Indo-Asian News Service (IANS) and Business Standard.

Overall, the Institute continues to perform well with a good quality faculty and students, and strong UG and PG programs. It is making all-out efforts and succeeding in realizing its vision of becoming a globally respected institution for high quality research and development in CS & IT.

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# 5. Dr. Pravesh Biyani

1. Dr. Saket Anand

7. Dr. Sambuddho Chakravarty

2. Dr Subhadip Raychudhuri

- 8. Dr. Ojaswa Sharma
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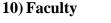




# 6. Dr. Chetan Arora

3. Dr. Anubha Gupta 4. Dr. A V Subramanyam

10 new faculty members have joined the Institute this year.



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#### Refereed Books/Journals (Published/Accepted) in 2013-14:

- 1. R. Sen, A. Maurya, B. Raman, A. Singh, R. Mehta, R. Kalyanaraman, Road-RFSense: A Practical RF-Sensing Based Road Traffic Estimation System for Developing Regions, ACM Transactions on Sensor Networks, October 2013
- 2. H. B. Acharya, co-author, of Pervasive and Mobile Computing: The Best Keying Protocol for Sensor Networks.
- 3. H. B. Acharya: Set questions for Starting out with Visual Basic, Gaddis et al., 6 e.
- 4. H. S. Bhatt, R. Singh, M. Vatsa, On Recognizing Faces in Videos using Clustering Based Re-ranking and Fusion, IEEE Transactions on Information Forensics and Security, Vol.9, No.7, pp.1056-1068, 2014.
- 5. D. Yadav, N. Kohli, J. S. Doyle, R. Singh, M. Vatsa, and K. W. Bowyer, Unraveling the Effect of Textured Contact Lenses on Iris Recognition, IEEE Transactions on Information Forensics and Security, Vol.9, No.5, pp.851-862, 2014.
- 6. G. Goswami, B. M. Powell, M. Vatsa, R. Singh, and A. Noore, FR-CAPTCHA: CAPTCHA based on Recognizing Human Faces, PLoS ONE, 9(4): e91708, 2014.
- 7. P. Agrawal, M. Vatsa, R. Singh, Saliency based Mass Detection from Screening Mammograms, Signal Processing, Elsevier, Vol. 99C, pp. 29-47, 2014.
- 8. S. Bharadwaj, M. Vatsa, and R. Singh, Biometric Quality: A Review of Fingerprint, Iris, and Face, EURASIP Journal of Image and Video Processing, 2014.
- 9. B. Powell, G. Goswami, M. Vatsa, R. Singh and A. Noore, CAPTCHA: Genetically Optimized Face Images CAPTCHA, IEEE Access, Vol.2, pp.473-484, 2014.
- 10. H. Mehrotra, M. Vatsa, R. Singh, and B. Majhi, Does Iris Change Over Time?, PLoS ONE 8(11): e78333, 2013.
- 11. N. Kose, J.-L. Dugelay, R. Singh, and M. Vatsa, Recognizing Face Images with Disguise Variations, In Face recognition in adverse conditions Ed. by M. De Marsico, M. Nappi, M. Tistarelli, 2014.
- 12. T.-H. Hubert Chan, Kevin L. Chang, R. Raman: An SDP Primal-Dual Algorithm for Approximating the Lovász-Theta Function. Algorithmica 69(3): 605-618 (2014)
- 13. S. Anand, S. Mittal, O. Tuzel and P. Meer, Semi-supervised Kernel Mean Shift Clustering, IEEE Trans. on Pattern Anal and Machine Intelligence, Sept. 2013.
- 14. S. G. Vadlamudi, S. Aine, P. P. Chakrabarti, Incremental Beam Search Information Processing Letters (IPL), Elsevier, 2013.
- 15. Somitra Kr Sanadhya: Contributed to Engineering Ethics by Feldermann

- 16. Somitra Kr Sanadhya: Reviewed the international editions of two Pearson publications: Matlab for Engineers, Moore, 4<sup>th</sup> edition and Data and Computer Communication, William Stallings, 10<sup>th</sup> Edition
- 17. S. Raychaudhuri, S. C. Das Monte Carlo study elucidates the type 1/type 2 choice in apoptotic death signaling in normal and cancer cells. Invited article for the special issue Apoptosis, Cells 2013 2:361-392.
- 18. Yu-Yang P, S. C. Das, S. A. Reddy, T Sourkas, P Kumaraguru, H. W. Sohn, W. Liu, SK Pierce, S. Raychaudhuri. Dynamic clustering of BCR- lipid rafts in antigen affinity discrimination by B cells. Invited article for the book titled B cells: molecular biology, developmental origin and impact on the immune system. (Nova Publishing 2013)
- 19. S. Raychaudhuri, S. C. Das. Death lig and concentration and the membrane proximal signaling module regulate the type1/type 2 choice in apoptotic death signaling. Invited article for the special issue Perspectives in Systems Biology, Systems and Synthetic Biology 2014 8:83-97.
- 20. K. Yadav and V. Naik. Invited paper titled Empowering Feature Phones to Build Smart Mobile Networked Systems. Appeared in The Journal of the Indian Institute of Science's, special issue on Cyber Physical Systems, Vol. 93, No3, Sep 2013
- 21. V. Naik helped Prof. P. C. P. Bhatt to write about Windows Phone OS in his An Introduction to Operating Systems: Concepts and Practice, 4<sup>th</sup> Edition, ISBN: 978C81C203C4836C3
- 22. A. Majumdar and R. K. Ward, Non-Convex Row-sparse MMV Analysis Prior Formulation for EEG Signal Reconstruction, Biomedical Signal Processing and Control.
- 23. A. Majumdar, K. Chaudhury and R. Ward, Calibrationless Parallel Magnetic Resonance Imaging: A Joint Sparsity Model, Sensors, Special Issue on Magnetic Resonance Sensors, Vol. 13(12), pp. 16714-16735, 2013.
- 24. M. Mohsina and A. Majumdar Gabor Based Analysis Prior Formulation For EEG Signal Reconstruction, Biomedical Signal Processing and Control, Vol. 8 (6), pp. 951–955, 2013
- 25. A. Majumdar, Motion Predicted Online Dynamic MRI Reconstruction from Partially Sampled K-Space Data, Magnetic Resonance Imaging, Vol. 31 (9), pp. 1578–1586, 2013.
- 26. A. Majumdar, Advances in online dynamic MRI reconstruction , in Frontiers of Medical Imaging, C.H. Chen, World Scientific Publishing

- 27. A Gupta and S D Joshi, Estimation of Multipath Fading Channel Using Fractal Based VSLMS Algorithm, WSEAS Transactions on Signal Processing, vol. 10, pp 231-242, April 2014.
- 28. M. S. Hashmi, P. J. Tasker, and F. M. Ghannouchi, An Alternative Nonlinear Waveform Measurement Setup for PA Characterization, IEEE Instrumentation and Measurement Magazine.
- 29. S. Anand, S. Mittal, O. Tuzel and Meer, P., Semi-supervised Kernel Mean Shift Clustering, IEEE Trans. on Pattern Anal and Machine Intelligence, Sept. 2013.
- 30. P.B. Sujit, S. Saripalli, and J.B. Sousa: UAV path following: A survey and analysis, IEEE Control System, Magazine, Vol. 32. No. 1, Feb 2014, pp. 42–59.

#### Refereed Conferences (Published/Accepted) in 2013-14

- 1. D Correa and A. Sureka. 2014. Chaff from the wheat: characterization and modeling of deleted questions on stack overflow. In Proceedings of the 23rd international conference on World wide web (WWW '14). International World Wide Web Conferences Steering Committee, Republic and Canton of Geneva, Switzerland.
- 2. D Correa and A. Sureka. 2013. Fit or unfit: analysis and prediction of 'closed questions' on stack overflow. In Proceedings of the first ACM conference on Online social networks (COSN '13). ACM, New York, NY, USA
- D. Correa, S. Lal, A. Saini, A. Sureka, Samekana: A Browser Extension for Including Relevant Web Links in Issue Tracking System Discussion Forum, Software Engineering Conference (20<sup>th</sup> APSEC, Dec 2013)
- 4. M Gupta and A. Sureka. 2014. Nirikshan: mining bug report history for discovering process maps, inefficiencies and inconsistencies. In Proceedings of the 7th India Software Engineering Conference (ISEC '14). ACM, New York, NY, USA,
- 5. A Rastogi and A. Sureka. 2014. SamikshaViz: a panoramic view to measure contribution and performance of software maintenance professionals by mining bug archives. In Proceedings of the 7th India Software Engineering Conference (ISEC '14). ACM, New York, NY, USA,
- 6. S. Agrawal and A. Sureka. Copyright Infringement Detection of Music Videos on YouTube by Mining Video and Uploader Meta-data. Big Data Analytics. Springer International Publishing, 2013.
- D. Correa; A. Sureka, Integrating Issue Tracking Systems with Community-Based Question and Answering Websites, Software Engineering Conference (ASWEC), 2013

- 8. V. Chaudhary, A. Sureka, Contextual feature based one-class classifier approach for detecting video response spam on YouTube, Privacy, Security and Trust (PST), 2013 Eleventh Annual International Conference
- 9. A. Rastogi and A. Sureka. Does Contributor Characteristics Influence Future Participation? A Case Study on Google Chromium Issue Tracking System. Open Source Software: Mobile Open Source Technologies. Springer Berlin Heidelberg, 2014.
- 10. N. Batra, H. Dutta, A. Singh, INDiC: Improved Non-Intrusive load monitoring using load Division and Calibration, 12th International Conference on Machine Learning and Applications (ICMLA 13), Miami, Florida, USA, Dec 4 –7, 2013
- 11. N Batra, J Kelly, O Parson, H Dutta, W Knottenbelt, A Rogers, A. Singh, M Srivastava. NILMTK: An Open Source Toolkit for Non-intrusive Load Monitoring. In: 5th International Conference on Future Energy Systems (ACM e-Energy), Cambridge, UK 2014
- 12. M Saha, S Thakur, A. Singh, Y Agarwal, EnergyLens: Combining Smartphones with Electricity Meter for Accurate Activity Detection and User Annotation, In: 5<sup>th</sup> International Conference on Future Energy Systems (ACM e-Energy), Cambridge, UK. 2014
- 13. M Jain, Deepika, J Mankoff, A. Singh, Energy Usage Attitudes of Urban India, Proceedings for the second ICT4S (ICT for Sustainability), August 24-27, 2014.
- 14. A Kiehn, P Raj, P Singh: A Causal Checkpoint Algorithm for Mobile Computing Environments, International Conference of Distributed Computing and Networking, ICDCN2014, LNCS 8314.
- 15. A. Saxena, V. Goyal, D. Bera. Efficient Enforcement of Privacy for Moving Object Trajectories in Proceedings of ICISS 2013
- 16. D Chang, A Kumar, S K Sanadhya Security Analysis of GFN: 8-Round Distinguisher for 4-Branch Type-2 GFN. INDOCRYPT 2013: Volume 7668/2012.
- 17. H. B. Acharya, co-author of SIGCOMM 2014: Troubleshooting SDN Control Software with Minimal Causal Sequences, Colin Scott et al.
- 18. H. B. Acharya, Global Internet Symposium 2014 : POPE and PaNeL : Fast Lookup in Routing Tables
- 19. H. B. Acharya, Local Computer Networks 2014 : On Rule Width and the Unreasonable Effectiveness of Policy Verification
- 20. P. Gupta, S. Behera, M. Vatsa, R. Singh, On Iris Spoofing using Print Attack, In Proceedings of International Conference on Pattern Recognition (ICPR), 2014.

- 21. T. I. Dhamecha, P. Sharma, R. Singh, M. Vatsa, On Effectiveness of Histogram of Oriented Gradient Features for VIS to NIR Face Matching, In Proceedings of International Conference on Pattern Recognition (ICPR), 2014.
- 22. A. Sankaran, M. Vatsa, R. Singh, Automated Clarity and Quality Assessment for Latent Fingerprints, International Conference on Biometrics: Theory, Applications and Systems, 2013
- 23. G. Goswami, S. Bharadwaj, M. Vatsa, and R. Singh, On RGB-D Face Recognition using Kinect, International Conference on Biometrics: Theory, Applications and Systems, 2013
- 24. T. Chugh, H. S. Bhatt, R. Singh, and M. Vatsa, Matching Age Separated Composite Sketches and Digital Face Images, International Conference on Biometrics: Theory, Applications and Systems, 2013.
- 25. P. Mittal, A. Jain, R. Singh, and M. Vatsa, Boosting Local Descriptors for Matching Composite and Digital Face Images, IEEE International Conference on Image Processing (ICIP), 2013.
- 26. S. Bharadwaj, M. Vatsa, and R. Singh, Can Holistic Representations be used for Face Biometric Quality Assessment?, IEEE International Conference on Image Processing (ICIP), 2013.
- 27. H. S. Bhatt, R. Singh, and M. Vatsa, On Rank Aggregation for Face Recognition from Videos, IEEE International Conference on Image Processing (ICIP), 2013.
- 28. S. Mittal, N. Gupta, P. Dewan, P. Kumaraguru Pinned it! A large scale study of the Pinterest network. 1st ACM IKDD Conference on Data Sciences (CoDS), 2014.
- 29. M. Mohamed, N. Sachdeva, M. Georgescu, S. Gao, N. Saxena, C. Zhang, P. P. Kumaraguru Van Oorschot and W. Chen A Three Way Investigation of a Game--CAPTCHA: Automated Attacks, Relay Attacks and Usability. 9th ACM Symposium on Information, Computer and Communications Security (ASIACCS), 2014.
- 30. N. Sachdeva, N. Saxena, and P. Kumaraguru. On the Viability of CAPTCHAs for Use in Telephony Systems: A Usability Field Study. 16<sup>th</sup> Information Security Conference November 13-15 in Dallas, Texas.
- 31. A. Gupta, H. Lamba, and P. Kumaraguru \$1.00 per RT #Boston Marathon #Pray For Boston: Analyzing Fake Content on Twitter. IEEE APWG eCrime Research Summit (eCRS), 2013.
- 32. P. Jain and P. Kumaraguru: Call Me MayBe: Understanding Nature and Risks of Sharing Mobile Numbers on Online Social Networks. Conference on Online Social Networks (COSN 2013).
- 33. G Bajaj and P Singh, Sahyog: A Middleware for Mobile Collaborative Applications , 8th ACM International Conference on Distributed Event Based Systems, 2014

- 34. S Gautam, BVR Reddy, P Singh: Content Centric networking: Shifting paradigm from host based networking International Conference on Computer and Intelligent Systems 2014.
- 35. S Asthana and P Singh, MVoice: A Mobile Based Generic ICT Tool, In Proceedings of the Sixth International Conference on Information and Communication Technologies and Development (ICTD). ACM, 2013. [Flagship conference of its area, CORE Rank: C]
- 36. A Gupta, J Thapar, A Singh, P Singh, V Srinivasan, V Vardhan, Independent Researcher Simplifying and Improving Mobile Based Data Collection, In Proceedings of the 6<sup>th</sup> International Conference on Information and Communication Technologies and Development (ICTD). ACM, 2013.
- 37. V Srinivasan, V Vardhan, S Kar, S Asthana, R Narayanan, P Singh, D Chakraborty, A Singh, A Seth, Airavat: An Automated System to Increase Transparency and Accountability in Social Welfare Schemes in India, In Proceedings of the 6<sup>th</sup> International Conference on Information and Communication Technologies and Development (ICTD).
- 38. S Anwer, A Aggarwal, R Purandare and V Naik. Chiromancer: A Tool for Boosting Android Application Performance. Accepted for publication in: Proceedings of the 1st International Conference on Mobile Software Engineering and Systems (MOBILESoft)-Co-located, with ICSE, June 2014.
- 39. K Falzon, E Bodden, and R Purandare. Distributed Finite-State Runtime Monitoring with Aggregated Events. In: Proceedings of the 4th International Conference on Runtime Verification (RV), September 2013
- 40. R Purandare, M B. Dwyer and S Elbaum. Optimizing Monitoring of Finite State Properties through Monitor Compaction. In: Proceedings of the International Symposium on Software Testing and Analysis (ISSTA), July 2013
- 41. S Aine and M Likhachev, Truncated Incremental Search: Faster Replanning by Exploiting Suboptimality , National Conference on Artificial Intelligence (AAAI), 2013
- 42. S Aine and M Likhachev, Anytime Truncated D\*: Anytime Re-planning with Truncation, Symposium on Combinatorial Search (SoCS), 2013
- 43. SG Vadlamudi, S Aine and PP Chakrabarti, Anytime Pack Heuristic Search, Pattern Recognition and Machine Intelligence (PReMI'13), 2013
- 44. S Aine, S Swaminathan, V Narayanan, Victor Hwang and Maxim Likhachev, Multi-Heuristic A accepted in Robotics: Science and Systems (RSS), 2014.

- 45. M Siddula, S Sanadhya, S Venkata, Cryptanalysis of a Digital Watermarking scheme based on Support Vector Regression , IEEE Systems, Man and Cybernetics, Manchester UK, October 13-16, 2013.
- 46. A Srinivasan and M. Bain (2013). Relational Models with Streaming ILP. 23rd International Conference on Inductive Logic Programming (conditionally accepted).
- 47. K Kannan and S Banerjee FlowMaster: Early Eviction of Dead Flow on SDN Switches In 15th International Conference on Distributed Computing and Networking, Coimbatore, INDIA (ICDCN 2014) (acceptance rate 20%)
- 48. K. Yadav, A. Kumar, A. Bharti, and V. Naik. Characterizing Mobility Patterns of People in Developing Countries using Their Mobile Phone Data. The 6th International Conference on Communication and Networks (COMSNETS'14), Bangalore, India, Jan 2014
- 49. S. Gupta, R. Garg, N. Jain, V. Naik, and S. Kaul. Android Phone Based Appraisal of App Behavior on Cell Networks. 1st ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft'14) in conjunction with ICSE'14, June 2014 Hyderabad, India
- 50. A. Shah and A. Majumdar, Parallelizing Sparse Recovery Algorithms: A Stochastic Approach, 19<sup>th</sup> IEEE DSP
- 51. H. K. Agarwal and A. Majumdar, Compressive Sensing Multi-Spectral Demosaicing from Single Sensor Architecture, China SIP 2014
- 52. H. K. Agarwal and A. Majumdar, Single-Sensor Multi-Spectral Image Demosaicing Algorithm Using Learned Interpolation Weights, IGARSS 2014
- 53. H. K. Agarwal and A. Majumdar, Extension of Sparse Randomized Kaczmarz Algorithm for Multiple Measurement Vectors, ICPR, 2014
- 54. A. Gogna, A. Shukla and A. Majumdar, Matrix Recovery using Split Bregman, ICPR, 2014
- 55. A. Majumdar Improved Blind Compressed Sensing for Dynamic MRI Reconstruction, ISMRM 2014. (International Society for Magnetic Resonance in Medicine flagship conference)
- 56. A. Majumdar, Elastic Net Formulation for MRI Reconstruction, ISMRM 2014. (International Society for Magnetic Resonance in Medicine flagship conference)
- 57. A. Majumdar and R. K. Ward, Improved MRI Reconstruction via Non-Convex Elastic Net, ICASSP 2014
- 58. A. Majumdar and S. S. Ram. Two-Dimensional Array Processing with Compressed Sensing, RadarCon 2014

- 59. A. Majumdar and R. K. Ward, Dynamic CT Reconstruction by Smoothed Rank Minimization, MICCAI, 2013.
- 60. A. Majumdar, R. K. Ward and T. Aboulnasr, FOCUSS Algorithm for Rank-Aware Row Sparse MMV Recovery, EUSIPCO 2013.
- 61. A. Majumdar, R. K. Ward and T. Aboulnasr, Generalized Non-Linear Sparse Classifier, EUSIPCO 2013.
- 62. A Gupta and SD Joshi, On the Concept of Intrinsic Wavelet Functions, Accepted, IEEE International Conference on Signal Processing & Communications, SPCOM-2014, 22-25 July, 2014, IISc Bangalore, India.
- 63. G. Nijhawan and M. S. Hashmi, A Novel Algorithm for Linearizing Diode Detectors, IEEE International Conference on Multimedia, Signal Processing and Comm. Technologies (IMPACT), November 2013.
- 64. M. A. Maktoomi and M. S. Hashmi, Dual-band Bagley Power Divider, IEEE Conference on Multimedia and Comm. Technologies (IMPACT), November 2013.
- 65. A. Jain, M. A. Maktoomi and M. S. Hashmi, A New Circuit to Measure Resistance Variation Suitable for Strain Gauge, IEEE International Conference on Signal Processing and Integrated Networks (SPIN), Feb. 2014.
- 66. P. Aggarwal, M. A. Maktoomi, and M. S. Hashmi, A Digitally Controlled Floating Resistor Using CMOS Translinear Cells, IEEE International Conference on Recent Advances in Electronics and Computational Sciences (RAECS), March 2014.
- 67. S Gupta, R Garg, N Jain, V Naik and S Kaul, Android Phone Based Appraisal of App Behavior on Cell Networks at MOBILESoft 2014.
- 68. A. V. Subramanyam: Compression Noise Based Video Forgery Detection, IEEE International Conference on Image Processing
- 69. A. V. Subramanyam: Cryptanalysis of a Digital Watermarking Scheme Based on Support Vector Regression, IEEE International Conference on Systems, Man and Cybernetics
- 70. H.K. Mondal, G.N.S. Harsha, S. Deb, An efficient hardware implementation of DVFS in multi-core system with wireless network-on-chip, accepted in IEEE Computer Society Annual Symposium on VLSI (ISVLSI) 2014.
- 71. M.S. Shamim, N. Mansoor, A. Ganguly, A. Samaiyar, S. Deb, S.S. Ram, Energy-efficient wireless network-on-chip architecture with log-periodic on-chip antennas, in Proceedings of Great Lakes Symposium on VLSI Systems (GLSVLSI) 2014.
- 72. A.K. Kanva, C.J. Sharma, S. Deb, Determination of SpO2 and Heart-rate using Smartphone Camera, accepted in International Conference on Control, Instrumentation, Energy & Communication (CIEC) 2014.

- 73. H.K. Mondal, S. Deb, Energy Efficient On-chip Wireless Interconnects with Sleepy Transceivers, IEEE International Design and Test Symposium (IDT), p.p:1-6, December, 2013.
- 74. G. Alvika, P.B. Sujit and S. Saripalli: A Survey of Autonomous Landing Techniques for UAVs, International Conference on Unmanned Aerial Systems, Orlando, Florida, May 26-28, 2014
- 75. A Gautam and P.B. Sujit: Role based cooperative target tracking algorithm, International conference of intelligent unmanned systems, August 2013, Jaipur
- 76. P. Maini and P. B. Sujit, Multi-robot Base Connectivity Constrained Task Servicing, International conference of intelligent unmanned systems, August 2013, Jaipur
- 77. U Gupta, N Nagpal and P.B. Sujit: Path planning among moving obstacles, International conference of intelligent unmanned systems, August 2013, Jaipur
- 78. A Gupta, S Lahiri, D Sarkar, S Aggarwal and P.B. Sujit: Human-robot teamwork in network disconnected regions, International conference of intelligent unmanned systems, August 2013, Jaipur
- 79. V. A. Bohara, A. H. Mazen, and O. Venard, A parameter identification algorithm for multi-stage digital pre-distorter in Proceedings of European microwave conference (EuMC), Nuremberg, Germany, 2013.
- 80. A. H. Mazen, V. A. Bohara, and O. Venard, Multi-stage digital predistortion based on indirect learning architecture, in Proceedings of 38th International Conference on Acoustics, Speech, and Signal Processing, (ICASSP), IEEE, Vancouver, Canada, 2013.
- 81. P. Singhal, V. A. Bohara, Energy efficient techniques for greener wireless cellular networks accepted to IEEE International Conference on Recent Advances & Innovations in Engineering (ICRAIE-2014), Jaipur, India, May, 2014.

#### Workshop/Demos/Posters published or accepted in 2013-14

- 1. P. Agrawal, M. Vatsa, R. Singh: HEp-2 Cell Image Classification: A Comparative Analysis, Machine Learning in Medical Imaging, September, 2013.
- 2. N. Batra, M. Gulati, A. Singh, M. B. Srivastava: It's Different: Insights into home energy consumption in India 5th ACM Workshop On Embedded Systems For Energy-Efficient Buildings (BuildSys), Rome, Italy, November 13-14, 2013
- 3. A. Gupta, J. Thapar, A. Singh, P. Singh, V. Srinivasan, V. Vardhan, Simplifying and Improving Mobile Based Data Collection, Sixth International Conference on Information and Communications Technologies and Development: Notes - Volume 2, Cape Town, South Africa, 2013

- 4. P. Dewan, M. Gupta, K. Goyal, and P. Kumaraguru MultiOSN: Realtime Monitoring of Real World Events on Multiple Online Social Media. I-CARE 2013.
- 5. P. Dewan, P. Kumaraguru. Facebook because studying events and spammers on Twitter is too mainstream. Security and Privacy Symposium. IITK. 2014.
- 6. N. Gupta, A. Aggarwal, P. Kumaraguru, Bitly can do better. Security and Privacy Symposium. IITK. 2014.
- 7. A. Gupta, M. Gupta, P. Kumaraguru. Twit-Digest: An Online Solution for Analyzing and Visualizing Twitter in Real---Time. Security and Privacy Symposium. IITK 2014.
- 8. A. Gupta, H. Lamba, P. Kumaraguru. Analyzing and Measuring Spread of Fake Content on Twitter during High Impact Events. Security and Privacy Symposium. IITK. 2014.
- 9. N Sachdeva, N. Saxena and P. Kumaraguru. On the Viability of CAPTCHAs for Use in Telephony Systems: A Usability Field Study Proceeding of the 11th Asia Pacific Conference on Computer Human Interaction (APCHI 2013).
- A Guha, Y Zhang, R Rasool, A Chien. Calibrating the Relationship between Hardware Customization and Energy Efficiency, University of Chicago Technical Report TR-2013-04. July 2013.
- 11. A Guha, Y Zhang, R Rasool, A Chien. Systematic Evaluation of Workload Clustering for Extremely Energy-Efficient Architectures, ACM SIGARCH Computer Architecture News. Vol. 41, Issue 2, Pages 22-29, May 2013.
- 12. R Rasool, A Guha, D Vasudevan, A Shambayati, A Chien. The 10x10 Project: Can we have both extreme energy efficiency and programmability? 2nd Greater Chicago Area Systems Research Workshop, Northwestern University, Evanston, IL, May 2013
- 13. S Aine and M Likhachev, Truncated Incremental Search , submitted to AI Journal, 2014
- 14. N Bagheri, P Gauravaram, M Safkhani and S K Sanadhya, De-synchronization and Traceability Attacks on RIPTA-DA Protocol, RFIDSec 2013, Graz, Austria, July 9-11, 2013
- 15. S F Aghili, N Bagheri, P Gauravaram, M Safkhani and S K Sanadhya, On the Security of two RFID Mutual Authentication Protocols, RFIDSec 2013, Graz, Austria, July 9-11, 2013.
- 16. S Banerjee and M Bolic. Threadguide: profiler assisted application adaptation on CMP. Proceedings of the 5th IBM Collaborative Academia Research Exchange Workshop, 2013. (I-CARE 13) New Delhi,

- 17. G Bansal, A Gupta, U Pyne, M Singhal and S Banerjee. A Framework for Performance Analysis and Tuning in Hadoop Based Clusters, Workshop on Smarter Planet and Big Data Analytics (SPBDA 2014) held in conjunction with ICDCN 2014.
- 18. V Goyal, B. Shamkant. Navathe: A ranking measure for top-k moving object trajectories search. ACM, GIR 2013: 27-34,
- 19. V. Subbaraju, A. Kumar, V. Nandakumar, S. Batra, S. Kanhere, P. De, V. Naik, D. Chakraborty and A. Misra. Conference Sense: Monitoring of Public Events Using Phone Sensors. Accepted at First International Workshop on Pervasive Urban Crowdsensing Architecture and Applications (PUCAA'2013) with UbiComp 2013, Sept 9, 2013 in Zurich, Switzerland
- 20. M. Hasija and V. Naik. MMonitor: Android OS monitoring tool. Accepted at the 14th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'13), July 29 to Aug 1, 2013, Bangalore, India
- 21. P. Jassal, A. Kumar, K. Yadav, V. Naik, and A. Singh. PlaceMap: Identifying and Managing Places of Human Interest Using Low Energy Location Interfaces. Accepted at the 14<sup>th</sup> ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'13), July 29 to Aug 1, 2013, Bangalore
- 22. A. Agarwal, J. Govindaraj, N. Juneja, and V. Naik. Feasibility Study of On Device and In the Cloud Virtualization of Mobiles. Accepted at 5th IBM Collaborative Academia Research Exchange (IC CARE'3), October 17 to 19, 2013, New Delhi
- 23. S. Soubam, V. Naik, and D. Chakraborty. Detection of Day to Day Human Activities using Smart phones. Accepted at 1st Xerox Research Centre India (XRCI) Open, March 14, 2014, Bangalore India
- 24. D. Jaisinghani, V. Naik, S. Kaul, and S. Srikanth. Analyzing Performance of Enterprise Wireless Networks in Presence of Heterogeneous Wireless Networks. Accepted at 1st Xerox Research Centre India (XRCI) Open, March 14, 2014, Bangalore
- 25. A. Majumdar Matrix Recovery using Split Bregman presented by Anupriya and Ankita at Research Showcase won the best poster award.
- 26. M Singh, S Kaul and P Biyani, On Large Throughputs in High Density Enterprise Wireless LAN(s) at XRCI Open 2014.
- 27. D Jaisinghani, V Naik and S Kaul, Analyzing Performance of Enterprise Wireless Networks in Presence of Heterogeneous Wireless Networks at XRCI Open 2014.
- 28. A. Majumdar and S. S. Ram, Two dimensional array processing with compressed sensing, IEEE Radar Conference 2014, May 2014. The IEEE Radar Conference is the flagship radar conference supported by the IEEE Aerospace and Electronic Systems Society (IEEE AESS).

- 29. A. Samaiyavar, S. S. Ram and S. Deb, Millimeter wave log periodic on chip antenna, EuCap 2014, April 2014. This is the premier Antennas conference in Europe. It is hosted by the EurAAP (European Society on Antennas and Propagation) and IEEE Antennas and Propagation Society (IEEE APS).
- 30. A. Samaiyar, S. Ram, S. Deb, Millimeter-Wave Planar Log Periodic Antenna for On-Chip Wireless Interconnects, accepted in European Conference on Antennas and Propagation (EuCAP), 2014.
- 31. S Deb, N Kumar, R Gupta, M Gulati, Cardio Watch: An Initiative Towards Affordable Preventive Cardiovascular Healthcare presented in COMSNET 2014.
- 32. V. A. Bohara, A. H. Mazen and O. Venard Digital Pre-distortion Algorithms Complexity and Sensitivity Study, in Proceedings of Par4CR workshop on cognitive radio, Kista, Sweden, June 2013.

# **Technologies & Tools Developed / Deployed:**

- 1. Software modules in IT and Health: Several software modules as listed below have been developed for HISP India as per the requirements of hospital level and district level systems being deployed by them in India and abroad:
- a. SDMX Module: Developed a software module for HISP India which integrates their hospital level medical record system with district level health information system. This module is currently deployed across several (approx. 10) district hospitals in Himachal Pradesh and in some hospitals in Kenya.
- b. OT Minor and OT Major modules: These are software modules developed for hospitalbased medical record system and are currently being deployed by HISP India across district hospitals in Himachal Pradesh.
- c. Food order module: It is developed as per the requirements stated by the district level information system being deployed in Bangladesh. These requirements were identified by HISP India and the developed module is passed on to them for deployment and use in Bangladesh.
- 2. Software modules in Building Energy Management: Several software modules have been developed for energy management on IIITD campus.
- 3. Software modules for field usage by other partners:
- a. ODK-Extension Developed a mobile based application that is used in Bihar and Andhra Pradesh to register the beneficiaries of National Rural Employment Guarantee Scheme (NREGS) and identify the errors in personal records as maintained by the government.
- 4. Sensing deployment in Bosch, Bangalore: 10 sensors, monitoring motion, temperature and light are installed at different locations in the new Bosch office at Bangalore. Data collected from these sensors is used internally by Bosch for their research purposes.
- 5. Design of a new Password based Key derivation function. It was submitted to the Password Hashing Competition. The Password Hashing Competition (PHC) is an effort organized to identify new password hashing schemes in order to improve on the state-of-the-art (PBKDF2, script, etc) and to encourage the use of strong password protection.
- 6. XMT-G: A compiler to enable coding in the simple parallel programming language XMT-C (C89 with two added instructions: spawn and ps, i.e. prefix-sum) for the CUDA platform.
- 7. Face Detection and Face Recognition CAPTCHAs, 2014 (IP Disclosure filed).
- 8. Face recognition tool: Technology transferred to DIT and currently used by user (law enforcement) agency after real world evaluations.
- 9. Five User agencies are using our system Twit-Digest http://twitdigest.iiitd.edu.in/twitdigest---v3/ IIIT-D researchers are interacting closely with them, getting inputs, feedback, and helping them with training

- 10. Five User agencies are using our system MultiOSN. <u>http://multiosn.iiitd.edu.in/multiosm-pr/</u>
- 11. One User agency is using our system Finding Nemo <u>http://nemo.iiitd.edu.in/findingnemo/home/</u>
- 12. Backpack: Through Collaboration with Xerox Research Centre India, we were able to deploy Backpack for courses at IIT Guwahati, and at SVIT, Engineering College in Bengaluru.
- 13. Wizters.com: In last one year, in total, we have 1,900 user accounts, 8,689 posts have been shared on Wizters, 21,000+ interactions served, 11,700 logins to the system. Technology has already been transferred to a company in Delhi and they are looking at building a startup around it in US. Wizters selected as one of the "Top150 Startup" in the Pioneers Challenge http://pioneers.io/
- 14. Ingagelive.com: Deployed the system in two organizations -- One is a Retail Store, and the other one is in Hospitality Industry.
- 15. TweetCred: twitdigest.iiitd.edu.in/TweetCred/ -- a Chrome Browser plugin for analyzing credibility of tweets in Twitter, went live in the last week of April, and by 30th April, we had 1+Million tweets analyzed through TweetCred.
- 16. Fair Fare. A system to find the fare and directions through Auto, Bus, and Metro in Delhi. <u>https://www.facebook.com/fairfareapp</u>
- 17. OCEAN Open-source Collation of eGovernment data And Networks. precog.iiitd.edu.in/research/ocean A system where you can search for any citizen in Delhi and the system will return information like Drivers' License number, PAN card details, etc.
- 18. Elections portal. http://bheem.iiitd.edu.in/India -- a system to analyze tweets in the context of general elections in India.
- 19. Software for online course-feedback system was developed. This new system is now used in IIIT-Delhi for taking course feedbacks.
- 20. Software for managing placement of students for IIIT-Delhi. The software was developed from scratch to replace the commercial system that was used by Placement cell.
- 21. 181 helpline: Several new features have been added and in last one year, the system was down only for two hours.
- 22. Trishulam: A woman safety app was developed on android platform and deployed. It was nominated among the top 5 for South Asia wide Manthan Award.
- 23. M-Voice: An integrated platform for providing IVR Systems and messaging services has been developed and deployed in different contexts. M-Voice was third among 400 entries for NASSCOM social innovation technology contest.

a. Deployment of M-Voice at JJ Hospital, Mumbai for interviewing CVD patients. We are working with Dr. Bhanu Duggal of JJ Hospital in developing mobile based intervention schemes for CVD patients.

b. M-Voice deployment for NREGS projects: In collaboration with Liberation Technologies Group of Stanford University, we have deployed our IVR system, named MVoice, in several locations at Andhra Pradesh, India. The IVR system provides vital information about NREGS (National Rural Employment Guarantee Scheme) projects to less literate people over voice interface. Multiple deployments cover different villages in the Ghattu region of Andhra Pradesh.

- 24. A Framework to seamlessly integrate multiple planners and yet guarantee consistency and quality of planning.
- 25. Cross-domain cluster ability evaluation for cross-guided data clustering based on alignment between data domains.
- 26. Extension of open source software SESC (a cycle accurate processor architecture simulator) is developed and shared with the community.
- 27. Complete PoC is developed for the DRDO project on Differential Power Attack on Smart card. The project has two main components: hardware design (including an FPGA board, interfacing hardware with DSO) and the software development (include communication with DSO and algorithm development on FPGA and Smart card). Both hardware and software components are developed and the complete solution is delivered to SAG, DRDO.
- 28. Webserver, Android app, Windows PC app, and Windows Phone app for BackPack
- 29. WiFi Share Android app: 50,000"installations
- 30. Developed a low cost multi-signal data acquisition system for preventive cardiology
- 31. Autonomous flying of quad-rotor using vision
- 32. Autonomous cars 4

# **Participation of faculty in National & International Seminars & Invited Speakers:**

# 1. Alexander Fell

Network on Chip Implementations in Bluespec, IISc Bangalore, 26th to 30th September 2013

### 2. Amarjeet Singh

- a. Invited as external speaker for the CDAC Chennai one day workshop on "Building Energy Efficiency"
- b. Invited speaker i5Talks organized by Mahindra Satyam
- c. Invited talk on Building Energy Efficiency at IBM Research, IISc, Bosch and EMC (June 2013) and at IGDTUW (July, 2013)

### 3. Angshul Majumdar

- a. Invited talk at "Recommender Systems" Bengal Engineering and Science University, March 2014.
- b. Invited talk at "Mathematical Modeling in MRI Reconstruction" Tehran University of Medical Sciences, September 2013.
- c. Invited talk at "Compressed Sensing and its applications in Biomedical Engineering"
   Workshop on Signal Processing and Communications at Bengal Engineering and Science University, August 2013.

### 4. Ashwin Srinivasan

a. Invited lectures at the University of Goa and the South Asian University.

# 5. A V Subramanyam

a. Invited talk by Estonian Embassy in New Delhi on Cyber Security and its business significance. Date: Feb 06, 2014

### 6. Donghoon Chang

- a. Invited talk at "Multiparty Computation", Korea University, Korea, May 6 2014
- b. Invited talk at "Homomorphic Encryption", Korea University, Korea, May 7 2014
- c. Invited talk at "Public Encryptions" Seoul Nation University of Science and Technology, Korea, May 12
- d. Invited Talk to TCS Innovation Day The Centre for Internet & Society, 29 January 2014. Title was "Midgame Attacks, Security, Privacy".

### 7. H. B. Acharya

Short course on Network Security, CONCYTEC, Lima, Peru. Summer 2014.

### 8. Mohammad Hashmi

- a. Invited talk at Multi-band and Multi-mode Transceiver, AMU Aligarh, 22nd July 2013.
- b. Invited talk at Nonlinear RF Measurement Techniques, IIT Patna, 8th October 2013.
- c. Invited talk at Experimental Setup for High Power Amplifier Design, RRCAT, Indore, 21st December 2013.

- d. Invited talk at High Efficiency Amplifier and Digital Predistortion, Freescale Semiconductors, Noida, 14th March 2014.
- e. Invited talk at Reconfigurable Transmitter, Jamia Millia Islamia, New Delhi, 28th April 2014.

# 9. Mayank Vatsa

- a. Biometrics at IAB@IIITD, seminar at University of Houston, June 2013
- b. Fingerprint and Iris Recognition, seminar at TCS Innovation Labs, October 2013

### Other visits:

Visiting Researcher, University of Houston, June – July 2013 (two weeks).

### 10. Ponnurangam Kumaraguru

- a. Invited talk. Privacy and Security in Online Social Media. IBM Winter School. Organized at IIITD: 18 Oct 2013
- b. Invited talk. Privacy and Security in Online Social Media. Part of the RCUK roundtable discussion: 13 Nov 2013
- c. Invited talk at Privacy and Security in Online Social Media. TACTiCS symposium at Chennai: 28 29 Jan 2014
- d. Invited talk at Privacy, Credibility, and Identity. Organized by RCUK. IIIT Bengaluru: 5–6 Feb, 2014.
- e. Invited talk at Privacy and Security in Online Social Media. First ACM Eminent Speaker Lecture in India. Thapar University. Patiyala: March 26, 2014
- f. Invited talk. Privacy and Identity. ACM Women's India Event. IIT Delhi: Feb 14, 2014

# Other Visits:

- a. Visiting Scientist Ministry of Home Affairs, Delhi, 1 July, 2013 31 July, 2013.
- b. Visiting Researcher Mumbai Police, 1 Dec, 2013 31 Dec, 2013.
- c. Co-organized a successful second edition of Security and Privacy Symposium
- d. Visited New York University, Abu Dhabi, to explore collaborative activities

# 11. Pushpendra Singh

- a. Invited talk on "Mobile Technologies for Healthcare" at International Conference on "Emerging Frontiers and Challenges in Management and Control of STIs and HIV."
- b. Invited to be part of India Eminent Speakers program conceived by ACM India
- c. Invited to deliver lecture in IBM I-Care Winter School on Mobile Cloud Computing

# 12. Rahul Purandare

- a. Delivered an invited talk on "Dynamic Program Analysis to provide Security Assurances" at Security and Privacy Symposium 2014 at IIT Kanpur.
- b. Conducted a workshop on "Use of Security Automata and Cross-cutting Concerns" at Security and Privacy Symposium 2014 at IIT Kanpur.

# 13. Richa Singh

- a. Invited talk at "Face Recognition" seminar at University of Houston, June 2013
- b. Invited talk at "Online Learning", Tata Consultancy Services, October 2013 Other Visits

Visiting Researcher, University of Houston, June – July 2013 (two weeks)

# 14. Shreemoy Mishra

a. Invited talk at Seminar at the Delhi School of Economics. "Consumer Privacy and the Value of Purchase History with Stochastic Values." October, 2013, New Delhi

### 15.Somitra Sanadhya

- a. Invited talk at New HMAC patches, IIT Ropar, 28-March-2014.
- b. Invited talk at Design and analysis of hash functions, Advanced Course on Cryptology and Information Security (ACCSIS 2013), SAG, DRDO, New Delhi, Nov 2013.
- c. Invited talk at Role of mathematics in Cryptography, Keshav Mahavidyalaya, Delhi University, 03-Oct-2013.
- d. Invited talk at Cryptography, Academic Staff College, JNU, New Delhi, 22-July-2013.
- e. Invited talk at Secure function evaluation, QIP on Intelligent Informatics, IIT Kanpur, 18-July-2013.
- f. Invited talk at Weaknesses in WEP, 09-May-2013, National workshop on Cryptology, Cochin University of Science And Technology (CUSAT), Kochi.
- g. Invited talk at Secure function evaluation, 10-May-2013
- h. Invited talk at Cryptographic Hash functions, 09-May-2013

### 16.K Sriram

- a. Invited talk at IIT-Delhi under ICMR program "Robustness and fragility in Cancer systems
- b. Invited talk in TCS-Delhi on "Dynamical modeling of cortisol that distinguishes normal, depressed, and PTSD subjects".

# 17. Subhadip Raychaudhuri

- a. Invited talk on how immune cells are activated and cancer cells get killed (IIITD, Feb 20, 2014)
- b. Invited talk at Monte Carlo simulation elucidates the type1/type2 choice in apoptosis under death lig and induction (Target meeting's 3rd World Molecular and Cell Biology online conference, Session 10: Cell Death, Feb 27, 2014).

### **18. Subhasis Banerjee**

a. Invited lecture in a workshop at CS department, IIT Roorkee : " Challenges in Multicore Processor Design" November 2013

### **Other Visits:**

Invited member of project review committee at SAG, DRDO - New Delhi

### 19. Sujay Deb

- a. Invited talk at NERIST on 'VLSI Design: The Road Ahead' on July 2013.
- b. Invited talk at NIT Silchar on 'Wireless Network on Chip' on February 2014.

# 20. Vikram Goyal

- a. Invited talk at AICTE Sponsored National Seminar on Mobile Computing and Mobile Applications Development, Panipat, March 2014
- b. Invited talk at Advanced Trends in Electronics, Computer and Communication, VCE Rohtak, October 2013

### Other Visits:

- a. Invited talk at National Conference on Advances in Computing Communication Networks and Electrical Systems , MDU Rohtak, March 2014
- b. National Conference on Issues and Challenges in Computing Techniques, IET Chandigarh, March 2014

### 21. Vinayak Nayak

- a. Invited to give a talk titled "Requirements from Wireless Networks for Measuring Physical Analytics of Mobile Users" at Next Generation Networks (NGNs) organized by Science & Technology Department, Embassy" of France in India, and Computer Society of India in association with CEFIPRA on April 5, 2014 at India Habitat Center, Lodi Road, New Delhi.
- b. Invited as a panelist on the discussion of Smart Cities at First Xerox Research Centre India (XRCI) Open on March 14, 2014 in Bangalore.
- c. Invited to give a talk titled "Interference in Enterprise WiFi Networks" at AirTight Networks, Pune, on Dec 24, 2013
- d. Invited to give a talk titled "Introduction to Mobile Computing" at Big Data and Mobile Computing Winter school as part of IBM Research's "ICCARE'13", October 17-18, 2013

# **Professional Services:**

### 1. Amarjeet Singh

- a. Adviser for the M.Tech program in Mobile Computing at IGDTUW
- b. Co-organizer E6 workshop, co-located with Comsnets, 2014
- c. Technical reviewer CAMTech Innovation Awards
- d. TPC Member Buildsys 2013, SenseApp2013, DARE2013 (Workshop in CIKM 2013), IISC Journal for CPS, eEnergy 2014
- e. Reviewer IEEE Journal for Internet Computing

### 2. Angshul Majumdar

- a. Technical Program Committee for IEEE ICASSP, IEEE ICIP and ChinaSIP.
- b. Reviewer for MICCAI
- c. Reviewer for various journals like *Transactions in Medical Imaging*, *Magnetic Resonance Imaging*, *Magnetic Resonance in Medicine*, *Biomedical Signal Processing and Control*, *Information Fusion* etc.

### 3. Anubha Gupta

Reviewer for EuraSIP, 2014, NCC, 2014, SPCOM 2014

### 4. Ashish Sureka

- a. Program Committee Member for Conferences: ISEC 2015, APSEC 2013 and 2014, BDA 2013 and 2014, ICSE SEET 2014, MSR 2014, IC3 2014
- b. ESE Journal Reviewer
- c. Social Media Publicity Chair ICSE 2014
- d. Tutorial Chair BDA 2014
- e. Session Chair APSEC 2013, ICSE SEET 2014, BDA 2013
- 5. Astrid Kiehn
- a. Member of the program committee of 'Petri Nets and Software Engineering (PNSE)' 2014.
- b. Reviewer of a MOOC for NPTEL, IIT Delhi.

### 6. Ashwin Srinivasan

- a. Member of the Board of Studies of the FMCS, at the South Asian University, and a Special Committee Member of the School of Computational and Integrative Sciences at the JNU.
- b. Member of the Program Committee of the 'International Conference on Inductive Logic Programming', now entering its 25th year. Former member of the 'European Conference on Machine Learning', and a reviewer for journals like the *Machine Learning Journal* and the JMLR.

# 7. A V Subramanyam

- a. Co-chair of 'International Workshop on Multimedia Signal Processing Techniques and Applications (MSP'14)'.
- b. Program committee member of 'ACM Multimedia (ACM MM'14) conference'.
- c. Program Committee member of 'International Conference on Secure knowledge Management (SKM'14)'

d. Program committee member of 'International Conference on Pattern Recognition (ICPR'14)'

Ad-hoc Reviewer:

- a. Reviewer of IEEE Transactions on Multimedia
- b. Reviewer of Journal of Optical Society of America A
- c. Reviewer of Elsevier Journal of Information Security and Applications
- d. Reviewer of Elsevier Journal of Information Fusion

### 8. Debajyoti Bera

Member of expert committee for curriculum & exam review of CSE programs, IGNOU

### 9. Donghoon Chang

- a. Program Committee Member of ICISC 2014 (International Conference on Information Security and Cryptology, ICISC 2014)
- b. Reviewers of SPACE Conference, INDOCRYPT Conference, IET Information Security Journal

### 10. Apala Guha

- a. 'IEEE Recent Advances in Intelligent Computational Systems (RAICS) 2013' Program Committee Member
- b. 'ACM SIGPLAN Conference on Languages, Compilers and Tools for Embedded Systems (LCTES) 2014' Program Committee Member
- c. 'The 12th IEEE Symposium on Parallel and Distributed Processing with Applications (ISPA) 2014' Program Committee Member

### 11. H.B. Acharya

Technical Program Committee member, ICNP 2014.

### 12. Mayank Vatsa

- a. Area Editor, Journal of Information Fusion, Elsevier, February 2014 Present
- b. Area Editor, IEEE Biometrics Compendium, January 2012 Present
- c. Review Process Manager, Journal of Information Fusion, Elsevier, July 2011 January 2014
- d. Program Committee Co-Chair, International Joint Conference on Biometrics, Tampa, USA, September 2014
- e. Program Committee Co-Chair, International Conference on Biometrics, Madrid, Spain, June 2013
- f. Session Chair, IEEE International Conference on BTAS, Washington DC, USA September 2013
- g. Session Chair: National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, Jodhpur, December 2013
- h. TPC: European Conference on Computer Vision, Zurich, September 2014
- i. TPC: IEEE International Conference on Image Processing, Paris, October 2014
- j. TPC: IEEE International Conference on Computer Vision and Pattern Recognition, Boston, June 2014
- k. TPC: National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, Jodhpur, December 2013
- I. Reviewer for Journals: IEEE TPAMI, CVIU, IEEE TIFS, IEEE TIP etc.

### 13. Mohammad Hashmi

- a. Associate Editor for the special edition of "International Journal of Microwave Science and Technology" published in May 2013. The focus of the edition was Advanced RF and Analog Integrated Circuits for Fourth Generation Wireless Communications and Beyond.
- b. Reviewer for IEEE Transactions on Microwave Theory Techniques, IEEE Transactions on Instrumentation and Measurement, IEEE Microwave and Wireless Component Letters, PIER Journals, International Journal on Microwave and Optical Technology, Several Conferences. Reviewer for top RF, Circuits and Instrumentation conferences such as IMS, APMC, ISCAS, and I2MTC.
- c. PC member: IEEE SPIN and IEEE IMPACT.
- d. MTech Thesis Examiner at IIT Delhi, IIT Kanpur, Gautam Buddha University Greater Noida, AMU Aligarh, Jamia Millia Islamia Delhi.
- e. PhD Thesis Examiner at Jamia Millia Islamia Delhi.

### 14. Ponnurangam Kumaraguru

- a. PC memberships, Editor/Associate Editor of journals, memberships of task forces, office bearers of societies/committees/organizing workshop/Tutorials,etc.
- b. Part of the Technical Advisory Committee for the ACM Conference on Online Social Networks (COSN),
- cosn.acm.org. I am also the publicity chair for the conference and I am on the PC.
- c. Reviewer. Journal of Information Systems Research. Aug 2013.
- d. Co-Organizer for Security and Privacy Symposium. Feb 20 Feb 22, 2014.
- e. Part of the Organizing team for the ACM India Event organized in IIT Delhi.
- f. Program Committee member for the 23rd International World Wide Web Conference, WWW 2013, for the track Social Network Analysis.
- g. Web Application Security 101 April 20, 2014. 40+participants attended. Students, professionals in Delhi

attended. Organized as Co-ordinator.

- h. A Short Course in Social Network Analysis. Sept. 2013. 40+participants attended. Organized as Coordinator. Faculty was Dr. Sharique Hasan, from Stanford University.
- i. Office bearer of the CMU Alumni Delhi Chapter.
- j. In the Faculty Selection Committee for Munjal University. Jan 2014–Present.
- Government advisory roles:
- a. Member of Committee to Evolve Long term Technology Perspective Plan (LTTPP) for DRDO. 2012–Dec 2013.
- b. Member of the First Joint Committee meeting for ICT between India & Peru. April 2014. Represented IIITD

### 15. Pushpendra Singh

- a. External Reviewer, CEFIPRA projects
- b. External Reviewer, DIT projects
- c. External M.Tech. Thesis examiner, IIT Delhi

### 16. Rahul Purandare

PC member of ACM SIGPLAN International Workshop on the State Of the Art in Java Program Analysis (SOAP 2014) – Co-located with PLDI.

### 17. Richa Singh

- a. Guest Editor, Special Issue on Fusion in Biometrics, Information Fusion, Elsevier, 2014
- b. Editorial Board Member, Journal of Information Fusion, Elsevier, July 2011---January 2014
- c. Associate Editor, EURASIP International Journal of Image and Video Processing, SpringerOpen, November 2013 – Present
- d. IEEE Biometrics Council Education Committee, January 2012 Present
- e. IEEE Biometric Council Conference Committee, October 2011 Present
- f. Publications Co---Chair and Area Chair, International Joint Conference on Biometrics, Tampa, USA, Sep 2014
- g. Publications Chair, International Conference on Biometrics: Theory, Applications and Systems, Washington DC, USA September 2013
- h. Sponsorship Co---Chair, International Conference on Biometrics, Madrid, Spain, June 2013
- i. Session Chair, Biometrics Workshop, CVPR June 2013
- j. Session Chair, IEEE International Conference on BTAS, Washington DC, USA September 2013
- k. Session Chair: National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, Jodhpur, December 2013
- I. TPC: IEEE International Conference on Computer Vision and Pattern Recognition, June 2014
- m. TPC: CVPR Workshop on Biometrics, June 2014
- n. TPC: European Conference on Computer Vision, Zurich, September 2014
- o. TPC: IEEE International Conference on Image Processing, Paris, October 2014
- p. TPC: National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, Jodhpur, December 2013
- q. Reviewer for Journals: IEEE TPAMI, IEEE TIFS, IEEE TIP, Information Fusion etc.

### 18. Saket Anand

- a. Reviewer for Elsevier's Pattern Recognition.
- b. Reviewed for CVPR 2014.

# 19. Sandip Aine

- a. Reviewer: AAAI (2013), RSS (2013), SOCS (2013)
- b. Editorial Board Member: AI Review
- c. Program Committee: ICAPS, 2013
- d. Program Committee: AAAI, 2015

### 20. Somitra Kr Sanadhya

- a. Reviewed papers for INDOCRYPT 2013; Integration, the VLSI Journal; Journal of Medical systems; International journal of Computer mathematics;
- b. Active member of Cryptology Research Society of India (CRSI). Involved in lecturing at National workshop on Cryptology.

### 21. Sanjit Krishnan Kaul

- a. Reviewer of transactions, Ubicomp, IBM I-care workshop
- b. CRAWDAD data sets on road conditions in India
- c. External member on MTP committees at IIT Delhi.

### 22. Sujay Deb

- a. TPC member of VLSI Design Conference 2014 (Digital Design track)
- b. Reviewer of JETC, SUSCOM, IGCC, IDT etc.

#### 23. K Sriram

- a. One of the organizers of fifth International Workshop on Biological Processes & Petri Nets (BioPPN 2014) in Tunisia.
- b. Reviewed two full-length articles on Petri-nets submitted in this workshop.

### 24. Shobha Sundar Ram

a. Reviewer for IEEE Trans. on Antennas and Propagation and IET Electronic Letters

#### 25. Subhadip Raychoudhury

a. Reviewed international Journal of Molecular Sciences

b. bioSystems

#### 26. Subhasis Banerjee

- a. Technical Program Committee of ICIEV 2013. WEPA 2013 (workshop in HiPC 2013)
- b. Reviewer of International Journal or Parallel Programming, Elsevier Journal of System Architecture.

### 27. P B Sujit

- a. Reviewer for journals JINT, Autonomous robots, IEEE control systems technology, IEEE Aerospace Electronics Systems, ASME, Sensors, Applied soft computing, IEEE Transactions on Systems, Man and Cybernetics: Systems
- b. Reviewer for conferences: ICRA, IROS, ACC, ECC, IFAC world congress, ACODS

### 28. Vikram Goyal

- a. Publicity Chair, International Conference on Big Data Analytics (BDA 2014)
- b. Poster Co-Chair, Security and Privacy Symposium, 2014
- c. Program Committee Member: WPEA 2013, ICCCT 2014, I-Care 2014, ICICT 2014, SPBDA 2014

### 29. Vinayak Nayak

- a. Invited to attend CoCCreation Workshop on Digital Activism and Online Communities organized by M4ID in New Delhi on April 24, 2014
- b. A member of the 1st Meeting of the Expert Committee to evaluate R&D Proposals on the Possible Impact of EMF Radiation Exposure from Mobile Towers and Handsets on Life and Related' R&D' Initiatives, organized by Science & Engineering Research Board (SERB), Department of Telecommunication (DoT), and Ministry of Telecommunication & Information Technology in Feb 2014

- c. Proceedings' Chair, Publications Chair and a Program Committee member for The First International Conference on Mobile Software Engineering and Systems (MOBILESoft 2014) in Hyderabad
- e. A reviewer for 2014 IEEE International Conference on Electronics, Computing and Communication Technologies (IEEE CONECCT), Bangalore during 6-7 Jan 2014
- f. A program committee member for NetHealth workshop to be held in conjunction with with COMSNETS'14 in Bangalore
- g. An evaluator for The Executive Agency for Higher Education, Research Development and Innovation Funding (UEFISCDI) of Romania in 2013
- h. A program committee member of DEVC4 Symposium on Computing for Development, Cape Town, South Africa, on Dec 6 to 7, 2013
- i. Publication Chair and a Program Committee member of Programming for Mobile and Touch PROMOTO 2013, Indianapolis, USA on Oct 26, 2013
- j.Co-chair for Demos, a member of the Publicity Sub-Committee, and a judge for the Best PhD Forum Award at The Sixth International Conference on Communication Systems and Networks (COMSNETS), Bangalore, India from Jan 6 to 10,2014

### 30. Vivek Bohara

- a. Reviewer for International Journal on Communication, IET communication, IEEE Transaction on signal processing etc.
- b. Reviewer for conferences on communication (Ex. ISWCS, Crowncom 2013 etc)

RollNo	Name	Credits earned	Subject	Name of Organisation	Туре
2010058	Nishant Jain	2	Teaching	CSSAR	CW
2010096	Vinayak Chopra	2	Teaching	CSSAR	CW
2012070	Parth Batra	2	Teaching	MAD	CW
2012001	Aakriti Tayal	2	Volunteer	Save Earth	CW
2012059	Megha Arora	2	Volunteer	Save Earth	CW
2012086	Rohan Katyal	2	Volunteer	Save Earth	CW
2012065	Nehal Gulati	2	Promote rights of education	Vishwas Vidhalaya and Resource Center	CW
2012132	Bavneet Singh	2	Volunteer and Teaching	Cheshire Homes India- Delhi Unit	CW
2012071	Pawas Chhokhra	2	Teaching	CSSAR	CW
2012062	Mrinal Kachhara	2	Teaching	Upkarita Seva Samiti	CW
2012075	Prasant Chiddela	2	Teaching	CSSAR	CW
2012106	Sonia Dalal	2	Teaching	Teaching at Khoj Foundation	CW
2012084	Rishi Baijal	2	Volunteer	Blind Relief Association	CW
	Saumya Prasad	2	Teaching	CSSAR	CW
	ARUSHI JAIN	2	teaching	Teaching	CW
2012073	Pranav Chadha	2	Teaching	CSSAR	CW
2011115	Swati Gautam	2	Data Entry and Case Study	Pratham	CW
2012011	Akash kumar	2	Volunteer (file work)	Aman Biradari	CW
	JUHI JETWANI	2	Teaching	CSSAR	CW
	Priyam Kumar	2	data Entry and Case Study	Pratham	CW
	Akhil Choudhary	2	Teaching	Aman Biradari	CW
	Himesh Yadav	2	Volunteer	Aman Biradari	CW
	Mimansa Som	2	Teaching	Ankur Society for People's Education	CW
	Aarushi Karnany	2	volunteer(old age home)	Gharaunda	CW
	Aakansha	2	Women Welfare	Aparajita	CW
	Ayush Mittal	2	vounteer (old age home)	Gharaunda	CW
	Kritisha Tondon	2	volunteer (child rights)	CRY	CW
	Vinita Chaudhary	2	volunteer (child rights)	CRY	CW
2012099		2	volunteer (child rights)	CRY	CW
	Akanksha Rana	2	volunteer (child rights)	CRY	CW
	Prateek Singh	2	data Entry and Case Study	Pratham	CW
	Mansi Verma	2	Teaching	Sarv Janhit Samaj Kalyan Samiti	CW
	Devyani Rohilla	2		Pratham	CW
	Shreya Singh	2	volunteer (under privileged)		CW
	Preeti Singh	2	volunteer (welfare of rural community)	Mahila Pratiraksha Mandal	CW
	Paridhi Mittal	2	volunteer(community literacy programme)	Akshay Pratishthan	CW
2012045	Jyoti Gangwar	2	volunteer (welfare of rural community)	Mahila Pratiraksha Mandal	CW
2012081	Priyanka Yadav	2	volunteer(community literacy programme)	Akshay Pratishthan	CW

2012053	Mahima Malik	2	Coordinator	Create Trust	CW
	Aditya Gupta	2		Sun Foundation	CW
2012163	Shuktika Jain	2	volunteer (under privileged)	Group Avantika	CW
2012095	Shiv Kandikuppa	2	data Entry and Case Study	Pratham	CW
2012002	Aarushi Chawla	2	Conducted Survey	under Amarjeet Sir, IIITD	CW
2012046	Jyotsana	2	volunteer (blind education and training)	Rashtriya Pragya Drishti Sansthan	CW
2012087	Rohan Kumar	2	data Entry and Case Study	Pratham	CW
2012094	Shikha Madan	2	teaching	Sewa Bharti	CW
2012154	Rajat Ruhan	2	teaching	SOS Children's Village	CW
2012067	Pallavi Chhikara	2	data Entry and Case Study	Pratham	CW
2012080	Priya Chaudhary	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012147	Nikita Singh	2	teaching	SARD- Society for All round developement	CW
2012121	Abhinav Aggarwal	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012074	Pranav Chhikara	2	data Entry and Case Study	Pratham	CW
2011036	Brijesh Garg	2	teaching	Rotary City	CW
2012169	Vipul Panwar	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012009	Aditya Mishra	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
	Inderdeep Singh	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2011053	Ishan Goel	2	volunteer (child rights)	CRY	CW
2012109	Suraj Rana	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012165	Siddhant Verma	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012020	Anisha Agrawal	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012038	Hardik Choudhary	2	Survey(energy consumption behaviour) Survey(energy	Under Amarjeet Sir, IIITD	CW
2012162	Shubham Verma	2	consumption behaviour) Survey(energy	Under Amarjeet Sir, IIITD	CW
2012005	Abhishek Dabas	2	consumption behaviour) Survey(energy	Under Amarjeet Sir, IIITD	CW
2012040	Harsh Vaibhav Talha Ahmad	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012111		2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012107	Srishty Saha	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
2012003	Aarushi Goel	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW

2012014	Akshima	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW
			Survey(energy		
2012017	Alankrita Pathak	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CW
			Survey(energy		
2012043	Jasmine Kaur	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CW
			Survey(energy		
2012021	Ankit Mittal	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CW
		_	Survey(energy		
2012072	Prabhjot Singh	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CW
0040400	Aliahau Dunhani	0	Survey(energy		014
2012126	Akshay Punhani	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CM
2012102	Shubhankar Singh	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CM
2012102	Shubhankar Siriyir	۷.	Survey(energy		01
2012088	Sarthik Ahuja	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CM
2012000			Survey(energy		011
2012054	Manan Gakhar	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CM
			Survey(energy		
2012098	Shrey Gupta	2	consumption behaviour)	Under Amarjeet Sir, IIITD	CM
2012164	Shweta Sood	2	teaching	Akshay Pratisthan	CM
2012116	Varnika Singh	2	Volunteer	Jeevothan Foundation	CM
2012101	Shubham Singh	2	data entry and case study	Pratham	CM
2012167	Udayan Tandon	2	data entry and case study	Pratham	CM
	Shagun Beniwal	2	Volunteer(old age home)	Gharaunda	CM
			teaching training and		
			understanding special	The Delhi Society for the Welfare of Special	
2012117	Vedanshi Kataria	2	children	Children (DSWSC)	CM
2012037	Geetali Tyagi	2	Volunteer	Cheshire Homes India- Delhi Unit	CM
2012029	Ayush Goel	2	Internship	The Earth Saviours Foundation	CW
			Volunteer for handicapped		
2012113	Tavneet Singh	2	children	Guru Nanak home	CM
	Anmol Aggarwal	2	Teaching	Rotary City	CM
	Deepali Kishnani	2	data entry and case study	Pratham	CM
2012110	Sushil Bharti	2	Teaching	HUMAN LIFE FOUNDATION	CM
2012093	Shashank Gautam	2	volunteer (child rights)	CRY	CM
2012143	Mansi Panwar	2	volunteer (child rights)	CRY	CM
2012137	Himanshu Singh	2	volunteer (child rights)	CRY	CW
			Fund Collection for		
2012066	Niharika Verma	2	Orphanage	Deepalaya	CM
2012064	Neeraj kumar	2	volunteer (Dil se campaign)	Aman Biradari	CW
			teaching training and		
			understanding special	The Delhi Society for the Welfare of Special	_
	Ayush Verma	2	children	Children (DSWSC)	CW
2012058	Meenakshi S.	2	data entry and case study	Pratham	CM

2012142	Manish Kumar	2	volunteer (Dil se campaign)	Aman Biradari	CW
2012018	Ananya Harsh Jha	2	teach English speaking skills	Teach India (READ India)	CW
2012039	Harkirat Singh Lamba	2	teaching training and understanding special children	The Delhi Society for the Welfare of Special Children (DSWSC)	CW
2011035	Bhawna Singh	2	Teaching	HOPE	CW
2012023	Archie Gupta	2	Teaching and Survey	Jan Sikshan Sansthan	CW
2012056	Mansi Vijh	2	Teaching	CSSAR	CW
2012019	Anchita Goel	2	Volunteer	Chinmaya Organisation for Rural Development	CW
2012050	Kriti Pandey	2	data entry and case study	Pratham	CW
2011038	Deepak Solanki	2	data entry and case study	Pratham	CW
2012118	Vedant Das Swain	2	data entry and case study	Pratham	CW
2012103	Shubhorup Biswas	2	Survey(energy consumption behaviour)	Under Amarjeet Sir, IIITD	CW