

YEARLY REPORT

2010 - 2011

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1 Summary

This year, for the first time, IIT-Delhi will have students in each of the four years of the BTech program, and each of the two years of the MTech program. With this year's admissions, our total student strength has now reached 308 UG students, 53 MTech students, and 21 PhD students.

To our existing programs (BTech(IT), PhD(CS), and MTech in CS with specialization in Information Security), we added another MTech program – specialization in Data Engineering. It is a unique program – first of its kind in the country.

Our faculty strength has increased to 19. We continue to recruit in a highly selective manner, keeping the quality very high – all of our faculty members have PhDs from fine Institutions across the world, most of them having obtained their PhD in the US. Two more candidates, who are currently in the US, have accepted our offer and plan to join in Oct / Nov 2011.

Institute's faculty members continue to pursue top quality research. They have published a total of 31 papers, most of them in International journals and conference proceedings. 15 proposals of faculty members have been approved for funding by various agencies for a total R&D project funding commitment of Rs.13,728,424/-.

Our faculty has received one best poster award; one PhD Student was selected for the IBM PhD Fellowship, which globally awarded around 70 such fellowships with about 7 in India. One PhD student got the coveted Microsoft PhD Fellowship – only six are given across India. Three PhD students were selected for TCS PhD Fellowship, out of a total of about 20 Fellowships given.

IIT-Delhi organized the first Indo-US teaching-learning workshop at college level in its premises. The workshop was funded by Indo-US S&T foundation and was attended by about 8 delegates from US and about 30 delegates from India. A few other workshops and symposia were organized by the Institute.

While no placements have taken place as the first batch is yet to graduate, many 3rd year students and MTech students got high quality internships in India and abroad. A total of 40 got internships, of which 22 were in private companies in India, 12 were abroad, and 6 in government and other sectors.

IIT-Delhi organized full selection committee meetings in the US in April 2011. This is perhaps the first time in recent past that an academic Institution from India is holding selection committee meeting in US, where the largest number of Indians graduates with PhDs in Computer Science every year. Out of the offers made, one candidate has accepted the offer.

The construction of permanent campus is reaching the final stages. After some delays, the current schedule is that the academic buildings will be operational in January 2012,

while faculty residences, some of the hostels, and some other buildings will be ready by June 2012.

Overall, the Institute continues to do well with good quality faculty and students, and strong UG and PG programs. However, much more remains to be done to reach closer to our vision of becoming a globally respected institution.

2 Research and Development

2.1 Research Publications

Refereed Journals

1. Powell B, Day A.C, Singh R, Vatsa M and Noore A, *Images based CAPTCHA for Improved Security*, International Journal of Multimedia Intelligence and Security, Vol. 1, No. 3, pp. 269-284, 2010
2. De S, Das A, and Sureka A., *Product Failure Root Cause Analysis During Warranty Analysis for Integrated Product Design and Quality Improvement*, International Journal of Product Development (IJPD), Vol. 12, No.3/4 pp. 235 – 253, 2010
3. Vatsa M, Singh R., Noore A, and Morris K, *Simultaneous Latent Fingerprint Recognition*, In Applied Soft Computing, Elsevier, Vol. 11, No. 7, pp. 4260-4266, 2011

Refereed Conferences

1. Singh, A, Naik P, Lal S, Sengupta R., Saxena S, Singh P, and Puri A, *Improving the Efficiency of Healthcare Delivery System in Underdeveloped Rural Areas*, Workshop in Networked Healthcare Technology (NetHealth), January 4, 2011, Bangalore, India (with The third International Conference on Communication Systems - ComsNets)
2. Yadav K., Naik V, Singh P, and Singh A, *Alternative Localization Approach for Mobile Phones without GPS*. Accepted as a demo at Middleware 2010 (ACM/IFIP/USENIX 11th International Middleware Conference) in Bangalore, India from November 29 - December 3, 2010
3. Bharadwaj S, Bhatt H.S., Vatsa M, and Singh R., *Quality Assessment based Denoising to Improve Face Recognition Performance*, In Proceedings of IEEE Computer Society and IEEE Biometrics Council Workshop on Biometrics at Computer Vision and Pattern Recognition Conference, 2011
4. Bhatt H.S., Bharadwaj S., Singh R and Vatsa M, *Evolutionary Granular Computing Approach for Recognizing Face Images Altered due to Plastic Surgery*, In Proceedings of the Ninth International Conference on Face and Gesture Recognition, 2011
5. Bhatt H.S., Bharadwaj S., Singh R and Vatsa M, *On Matching Sketches with Digital Face Images*, In Proceedings of the Fourth International Conference on Biometrics: Theory, Applications and Systems, 2010

6. Bharadwaj S., Bhatt H.S., Singh R, Vatsa M, and Singh S.K., *Face Recognition for Newborns: A Preliminary Study*, In Proceedings of the Fourth International Conference on Biometrics: Theory, Applications and Systems, 2010.
7. Vatsa M, Singh R, Bharadwaj S, Bhatt H.S., and Noore A., *Matching Digital and Scanned Face Images with Age Variation*, In Proceedings of the Fourth International Conference on Biometrics: Theory, Applications and Systems, 2010.
8. Bharadwaj S., Bhatt H.S., Vatsa M, and Singh R, *Periocular Biometrics: When Iris Recognition Fails*; In Proceedings of the Fourth International Conference on Biometrics: Theory, Applications and Systems, 2010.
9. Bharadwaj A., Arjunan P., Singh A., Naik V, Singh P., *MELOS: A Low-Cost and Low-Energy Generic Sensing Attachment for Mobile*, 5th ACM Workshop on Networked Systems for Developing Regions, June 28th 2011, Washington DC, (with Mobisys 2011)
10. Yadav K, Kumaraguru P, Goyal A, Gupta A, and Naik V., *SMS Assassin: Crowd sourcing Driven Mobile-based System for SMS Spam Filtering*, the 12th Workshop on Mobile Computing Systems and Applications (HotMobile), March 1-2, 2011, Phoenix, AZ, USA
11. Kumar A, Sanadhya S, Gauravaram P, Safkhani M and Naderi M, "*Cryptanalysis of Tav-128 Hash function*", Indocrypt 2010, the 12th International Conference on Cryptology in India. Indocrypt 2010 will take place 11–14 December 2010 at the Institute of Mathematical Sciences in Chennai
12. Correa D and Sureka A, *Mining Twitter Tweets to Tag Flickr Photos and YouTube Videos*, 3rd International Workshop on Search and Mining User-generated Contents (SMUC 2011) co-located with 20th ACM Conference on Information and Knowledge Management (CIKM 2011)
13. Sureka A, *Mining User Comment Activity for Detecting Forum Spammers in YouTube*, International Workshop on Usage Analysis and the Web of Data (USEWOD 2011), Co-located with the 20th International World Wide Web Conference (WWW 2011), Hyderabad, March 28th (2011)
14. Sureka A, Goyal A and Rastogi A, *Using Social Network Analysis for Mining Collaboration Data in a Defect Tracking System for Risk and Vulnerability Analysis*, Fourth India Software Engineering Conference (ISEC), 2011
15. Sureka A and Goyal A, *Insights on Transferability of Dialog-Act Cue-Phrases Across Communication Domains, Modality and Semantically Similar Dialog-Acts*, 8th International Conference on Natural Language Processing (ICON), 2010
16. Sureka A and Jalote P, *Detecting Duplicate Bug Report Using Character N-Gram-Based Features*, The 17th Asia-Pacific Software Engineering Conference (APSEC), 2010
17. Sureka A, Kumaraguru P, Goyal A, Chhabra S, *Mining YouTube to Discover Extremist Videos, Users and Hidden Communities*, The Sixth Asia Information Retrieval Society Conference (AIRS), 2010

18. Nagaraja S, *Botgrep: detecting P2P bots using structured graph analysis at Usenix Security Symposium* (Aug) 2010
19. Nagaraja S, *P3CA: Private Anomaly Detection across ISP Networks* at Privacy Enhancement Technologies Symposium (July) 2011
20. Nagaraja S, Houmansadr A, Piyawonwisal P, Singh V, Agarwal P, Borisov N, "*Stegobot: a covert social network botnet*", in the Proceedings of the Information Hiding Conference (IHC) 2011.
21. Nagaraja S, Schaffer P., and Aouada D, "*Who Clicks There!: Anonymising the Photographer in a Camera Saturated World*", Workshop on Privacy in the Electronic Society (WPES) 2011
22. Srivastava S, Asthana A, Bhanja S and Sarkar S, "*QCAPro: An Error-Power Estimation tool for QCA Circuit Design*", ISCAS-2011, IEEE International Symposium on Circuits and Systems, Rio de Janeiro, May 2011
23. Chhabra S, Aggarwal A, Benevenuto F, and Kumaraguru P. *Phi.sh/\$oCiaL: The Phishing Landscape through Short URLs*. Accepted at 8th Annual Collaboration, Electronic messaging, Anti-Abuse and Spam Conference (CEAS 2011)
24. Ion I., Sachdeva N, Kumaraguru P, and Capkun S. *Home is Safer than the Cloud! Privacy Concerns for Consumer Cloud Storage* Symposium on Usable Privacy and Security (SOUPS) (2011)
25. Agarwal V, Desai V, Kapoor S, Kumaraguru P, and Mittal S. *Enhancing the Rural Self Help Group – Bank Linkage Program*. IEEE International Conference on Service Operations and Logistics, and Informatics (2011)
26. Gupta A, Viswanathan K. K., Joshi A., Finin T., and Kumaraguru P. *Integrating Linked Open Data with Unstructured Text for Intelligence Gathering Tasks*. In Proceedings of the Information Integration on the Web (II Web), Co-located workshop at WWW (2011)
27. Khot R, Kannan S., and Kumaraguru P., *Marasim: A Novel Jigsaw Based Authentication Scheme using Tagging* 29th International Conference on Human Factors in Computing Systems CHI 2011 ACM
28. Adappa S., Agarwal V, Goyal S., Kumaraguru P, and Mittal S. *User Controllable Security and Privacy for Mobile Mashups* HotMobile 2011
29. Lamba H, Sarkar A, Vatsa M, and Singh R, *Can Humans and Automatic Algorithms Recognize Look-Alike Faces?* IIITD – TR – 2011 - 003, 2011.
30. Anand A, Bedathur S, Berberich K and Schenkel R; *Temporal Index Sharding for Space - Time Efficiency in Archive Search Infrastructure and Facilities* in the SIGIR 2011
31. Padhariya N, Mondal A, Goyal V, Shankar R, Madria S.K.: "*EcoTop: An Economic Model for Dynamic Processing of Top-k Queries in Mobile-P2P Networks.*" Proc. DASFAA 2011, pages 251-265.

2.2 Sponsored / Consultancy Projects

Sponsored Research Projects

1. **Statistical Evaluation of Simultaneous Latent Fingerprint Impressions** by department of Science and Technology, Govt. of India **PI:** Dr. Mayank Vatsa. **Funding:** ` 550,000/- **Duration:** Three years
2. **Evolutionary Approach to Adaptive Fusion: A Tool for Improving Multimodal Biometric Performance** by United States department of Defense, USA. **PI/Collaborators:** Dr. A Noore and Dr. A. Ross. **Co-PI:** Dr. Mayank Vatsa and Dr. Richa Singh **Funding:** \$ 467,800/- **Duration:** One and a half year
3. **Harnessing Parallelism in Biometrics using GPUs** by NVIDIA **PI:** Dr. Mayank Vatsa and Dr. Richa Singh **Co-PI:** Dr. S. Bharadwaj **Funding:** ` 500,000/- **Duration:** One year
4. **Recognizing Surgically Altered Face Recognition** by department of Science and Technology **PI:** Dr. Richa Singh **Funding:** To be intimated **Duration:** Three years
5. **Development and Evaluation of Mobile Learning Techniques for Indian Masses** by department of Science and Technology, **PI:** Dr. Pushpendra Singh. **Funding:** To be intimated **Duration:** Three years.
6. **Intelligent Information Access on Low-end mobile phones** by the Microsoft Research **PI:** Dr. Vinayak Naik and Dr. Amarjeet Singh. **Funding:** ` 1,000,000/- **Duration:** One year
7. **Exploratory Research in Mobile Health** by the Nokia Research, Bangalore **PI:** Dr. Vinayak Naik **Funding:** ` 745,308 **Duration:** One year
8. **Google Faculty Award – Photographer anonymity** by Google Inc **PI:** Dr. Shishir Nagaraj **Funding:** \$ 34,000/- **Duration:** Two years
9. **IBM Faculty Award – Traffic analysis on the cloud** by IBM Hawthorne **PI:** Dr. Shishir Nagaraj **Funding:** \$10,000 **Duration:** Three years.
10. **Integrated Botnet Detection Programme** sponsored from Department of Science & Technology **PI:** Prof. N Balakrishnan **Co-PI** Dr. Shishir Nagaraja **Funding:** `5,500,000/- **Duration:** Two years
11. **An inter-disciplinary approach towards building ontology for online extremism** by Department of Science and Technology under Indo-Ireland Cooperative Science

- Programme **PI:** Dr. Ponnurangam Kumaraguru **Funding:** `836,000/-. **Duration:** Two years.
12. **Hemant Bharat Ram Fellowship: to conduct research in the area of security and privacy, PI:** Dr. Ponnurangam Kumaraguru **Funding:** `1,400,000/- **Duration:** Four years.
13. International Development Research Centre, Canada and Privacy International, UK. Privacy in India **PI:** Dr. Ponnurangam Kumaraguru **Funding:** `1,800,000/- **Duration:** 2 years
14. **Palladion**, Intelligence and Security Informatics. **PI:** Dr. Ponnurangam Kumaraguru **Funding:** `1,300,000/-. **Duration:** 2 years.

Consultancy Assignments

1. **Mobile Innovation Laboratory at IIT-Delhi** by the Nokia Research, Finland **PI:** Dr. Vinayak Naik **Funding:** ` 651,670. **Duration:** One year

Other Support / Grants

1. Richa Singh - DST Travel Award for International Conference on Pattern Recognition, Turkey by Dept of Science and Technology.
2. Saket Srivastava - Awarded the international travel grant by Department of Science and Technology (DST), India to attend and present my paper at ISCAS 2011 conference in Rio de Janeiro, Brazil.
3. Ponnurangam Kumaraguru - IBM awarded fellowship to two M Tech students of IIT-Delhi
4. Kuldeep Yadav – UNESCO awarded travel award for ICT4D 2010
5. Kuldeep Yadav – Awarded APSYS 2010 travel award for ACM Asia Pacific Workshop on Systems (at SIGCOMM)

2.3 Patents

1. Ashish Sureka, *Automated Predictive Data Mining Model Selection Using a Genetic Algorithm*, US Patent number: 7801836, Assignee: Infosys Technologies Ltd, (Granted on September 21, 2010)

2.4 Technologies Developed / Deployed

1. Photographer anonymity technology: **Shishir Nagaraja**: Developed to protect whistleblowers, journalists, dissidents, and law-enforcement personnel (Project sponsored by Google faculty grant)
2. Network security tool: **Shishir Nagaraja**: developed for DRDO for resisting botnet attacks on enterprise networks and small-business; it incorporates a new statistical algorithm based on non-linear dimensionality reduction.
3. Privacy-preserving traffic analysis on the cloud: **Shishir Nagaraj**: developed for IBM project – traffic analysis to detect attacks and intrusions is often time consuming. This technology helps multiple ISPs to collaborate on detecting attacks in a privacy preserving way whilst also leveraging the cloud technology to keep costs down and address privacy requirements of the ISPs themselves. (linked to IBM project below and P3CA paper above)
4. CVDMagic Application: **Pushendra Singh, Amarjeet Singh, and Vinayak Naik**: Developed a CVDMagic application for early detection of Cardio-Vascular Disease based on previously proposed studies using non-laboratory based tests. The application was developed within the Sana Framework (developed by Sana group at MIT - <http://www.sanamobile.org>) and deployed in rural areas of Punjab with Electronic Health Point (EHP) who are setting up rural clinics in that state. The healthcare worker from EHP collected data for about 190 people using the application and we are in the process of analyzing the collected data and working on a paper for ICTD 2012
5. Disha Journey Planner: **Pushendra Singh, Amarjeet Singh, and Vinayak Naik**: Developed as an internship project and later on modified to include extensive database from the industrial partner – DIMTS, this application provides the user with route information for going between any two places in Delhi using public transport. The application is currently hosted and maintained by our industrial partner – Delhi Integrated Multi-modal Transportation Systems (DIMTS)
6. Right Fare: **Pushendra Singh, Amarjeet Singh, and Vinayak Naik**: Developed as an internship project, the application takes two locations in Delhi as input over SMS and calculates the approximate auto fare between the two given locations. The application also returns the list of landmarks that will come on the way. The service is supposed to help people knowing the shortest possible route between any two locations and avoid being overcharged. Our industrial collaborator, a startup called Ideophone. (The name by Ideophone is changed to Autofare <http://www.ideophone.in/products/sms/>) has now further extended the service with some additional features including support for multiple cities by.
7. IVR system: **Amarjeet Singh**: Implementation of for Institute's admission process. As logs suggests, it has been used by hundreds of applicants.

8. Biometric Quality Assessment Tool: **Mayank Vatsa and Richa Singh**: developed the tool for Army Research Laboratory, Department of Defense, USA
9. Context Switching Tool for Multimodal Biometric Fusion: **Mayank Vatsa and Richa Singh**: developed the tool for Army Research Laboratory, Department of Defense, USA

3 Education

3.1 Student Intake and Total Student Strength

B-Tech intake in different categories :	Delhi (102)	Outside Delhi (18)
Average class XII percentage :	86.31%	
Average AIEEE rank :	15650	
MTech intake in different programs :	Information Security -	35
	Data Engineering -	18
PhD intake :	07	

Total Students

- Total Undergraduate students : 324
- Total MTech students : 53
- Total PhD students : 21

3.2 Students Graduated

Nil

3.3 Courses Taught

B.Tech. 2010 batch			
Semester-I (Monsoon)		Semester-II (Winter)	
1	Communication Skills	1	Advanced Calculus & Linear Algebra
2	Digital Circuits	2	Computer Organization
3	Discrete Mathematics	3	Data Structures & Algorithm
4	Introduction to Programming	4	Humanity and Social Science (T&S/POK)
5	System Management	5	Theory of Computation

B.Tech. 2009 batch			
Semester-III (Monsoon)		Semester-IV (Winter)	
1	Advanced Calculus and Linear Algebra	1	Algorithm Design & Analysis
2	Advanced Programming	2	Computer Networks

3	Critical Reading	3	Digital Communication
4	Operating Systems	4	Humanity and Social Science (TS/RM/POK/Psychology)
5	Probability and Statistics	5	Fundamentals of Database Systems

B.Tech. 2008 batch			
Semester-V (Monsoon)		Semester-VI (Winter)	
1	Advanced Algorithm	1	Advanced Calculus and Linear Algebra
2	Advanced Calculus and Linear Algebra	2	Applied Cryptography
3	Biotechnology	3	Digital and Cyber Forensics
4	Distributed Systems and Security	4	Embedded Systems
5	Finance-I (Foundations of Finance)	5	Finance-II (Valuation and Portfolio Management)
6	Foundations of Computer Security	6	Humanity and Social Science (T&S/POK/RM/Psychology)
7	Image Analysis	7	Information Retrieval
8	Information Integration and Data Analytics	8	Machine Learning
9	Mobile Computing	9	Pattern Recognition
10	Software Engineering	10	Privacy Enhancing Technologies
		11	Technical Communications

MTech 2010 batch			
Semester-I (Monsoon)		Semester-II (Winter)	
1	Advanced Algorithm		Applied Cryptography
2	Distributed Systems & Security		Digital and Cyber Forensics
3	Ethical Hacking		HSS-Research Methods
4	Foundations of Security		Information Retrieval
5	Mobile Computing		Machine Learning
6	Topics in Computer Security		Privacy Enhancing Technologies
			Technical Communications

4 Outreach and Professional Service

4.1 Participation of Faculty in National & International Conferences

Singh P.; The 11th International Middleware Conference in Bangalore India from November 29 – December 3, 2010

Jalote P, Sureka A.; The 17th Asia Pacific Software Engineering Conference, APSEC 2010, Sydney, Australia, November 30 - December 3, 2010

Vatsa M, Singh R.; IEEE 4th International Conference on Biometrics: Theory, Applications and Systems in Washington DC USA from Sept 27 – 29, 2010

Vatsa M, Singh R.; IEEE 20th International Conference on Pattern Recognition (ICPR) held in Istanbul, Turkey from 23-26, August 2010.

Sanadhya S.; The 12th International Conference on Cryptology in India (Indocrypt 2010) at the Institute of Mathematical Sciences in Chennai from 11th –14th Dec 2010

Sureka A, Kumaraguru P.; the 6th Asia Information Retrieval Society Conference (AIRS), at National Taiwan University, Taipei, Taiwan from 1st – 3rd December, 2010

Sureka A.; The 8th International Conference on Natural Language Processing (ICON 2010) held at IIT Kharagpur, India, during 8 - 11 December, 2010

Gupta G.; DFRWS 2010 Annual Conference at University Place Hotel near Portland State University, Portland, Oregon from 2nd – 4th August 2010.

Vatsa M, Singh R.; IEEE Computer Vision and Pattern Recognition (CVPR) 2011 in Colorado, USA from June 21-23, 2011.

Vatsa M, Singh R.; The 9th IEEE Conference on Automatic Face and Gesture Recognition in Santa Barbara from 21 – 25 March, 2011

Srivastava S.; The IEEE International Symposium on Circuits and Systems (ISCAS) in Rio de Janeiro, Brazil from 15th – 18th May 2011

Sureka A, Kumaraguru P.; The 20th International World Wide Web Conference (WWW 2011) in Hyderabad from 28th March – 1st April 2011.

Jalote P, Sureka A.; the 4th India Software Engineering Conference (ISEC) at Thiruvananthapuram from February 23 - 26, 2011

Kiehn A.; Automated, Concurrency and Timed Systems (ACTS) III at the Institute of Mathematical Sciences in Chennai from January 27 – 29, 2011

4.2 Other Visits by Faculty

1. *Jalote P.*; Delivered a keynote speech in the 29th IEEE International Symposium on Reliable Distributed Systems (SRDS) held in New Delhi on 3rd Nov 2010.
2. *Singh A.*; Invited by Microsoft Research India to attend the Microsoft Faculty Summit in Seattle, July 18-20, 2011

3. *Naik N.*; Invited by Coventry University UK to visit them for 10 days to further collaboration in the area of Sensor Networks and Mobile Computing
4. *Naik V.*; Invited by Microsoft Research India to attend the Microsoft Faculty Summit in Seattle, July 18-20, 2011
5. *Kumaraguru P.*; Attended the workshop Privacy and Security in Social Media: An International Perspective January 18 & 19, 2011
6. *Kumaraguru P.*; Visited UFMG, Brazil for research discussions from June 16, 2011 - July 4, 2011
7. *Bedathur S.*; Visiting Max-Planck Institute for Informatics, Saarbruecken, Germany for Continued collaboration and advising of PhD students from May 6 - June 29, 2011
8. *Gupta G.*; Visited Georgia Tech Information Security Center, Georgia Institute of Technology, Atlanta, on research project and explored areas of mutual research interest from July 2010 to December 2010
9. *Gupta G.*; Delivered an invited talk on topic "Current and Future Trends in Digital Forensics" in PES college of Engineering, Bangalore from 25th March 2011 in FDP.
10. *Gupta G.*; Delivered an invited talk on "Current and Future Trends in Digital Forensics" at Haryana Police Academy from 16th June 2011.
11. *Nagaraja S.*; Distinguished lecture at the University of Calgary, Canada
12. *Nagaraja S.*; Invited lectures at University of Dresden, Germany; at EPFL, Switzerland; ETH Zurich
13. *Sanadhya S.*; Invited lecture to the participants of the Refresher course at JNU, New Delhi, Sept, 2010.
14. *Sanadhya S.*; Invited lecture in the Workshop on Security at NIIT University, Dec, 2010

4.3 Conference / Short Courses / Workshops Organized

1. **Research Showcase 2011** - 11-12 March 2011

IIIT-Delhi has organized its first Research Showcase – RS'11. The two day event showcased prominent research projects at the Institute – many of which were featured in leading conferences or are live working systems. Through RS'11, IIIT-Delhi gave to the outside world a snapshot of the work that has been going on in full frenzy by its students and researchers throughout the year. A total of 34 projects

were put on display - 13 in the Research Project category, and 21 in the Course Project category.

The event was attended by researchers from IBM TJ Watson Research Center, IBM India Research Labs, TCS Innovation Labs, DRDO, NIC, IIT Delhi, ABB Corporate Research. Student and faculty from college/universities from NCR like DU, IP, DCE, NSIT etc.

2. Indo US Workshop on Effective Teaching and Learning at University / College Level – 10 – 12 Feb 2011

The 3 day Indo-US workshop was held here at IIIT-Delhi with the primary objective of creating awareness in improving teaching and learning methods in university/college level. This workshop disseminated some of the best teaching practices that help students indulge in innovative learning, gathered from around the world. This event was jointly organized with University of Buffalo and sponsored by the Indo-US Science and Technology Forum.

3. Microsoft Azure Cloud Computing Workshop – 15 – 16 January 2011

IIIT-D and IIT-D ACM Student Chapters are together organizing Azure Cloud Computing workshop which is supported by Microsoft.

4. Design Science Research in Workshop - 17 Nov 2010

Workshop on design science research organized by IIIT-Delhi and USIEF

5. Deep Dive into Cloud Computing - 7 Sept 2010

Workshop on *cloud computing* organized by IIIT-D ACM Student chapter in collaboration with Microsoft

6. Mobile for Healthcare: Providing Last Mile Access in Telemedicine - 5-8 July 2010

Workshop on mobile technology for healthcare organized by IIIT-Delhi MUC group with a specific focus on Sana

4.4 Distinguished Visitors and Invited Seminars

Speaker (s)	Date	Talk Details
Dr. Krishna Shenai University of Illinois	June 27, 2011	Large-Scale Sensor Networks and Robotic Surgery
Dr. Om Deshmukh IBM India Research Lab	Apr 14, 2011	Sensei: Spoken Language Assessment for Call Center Agents

Prof. Mani Srivastava UCLA	Mar 9, 2011	From Measurements to Sustainable Choices: Embedded Sensing for Efficient Resource Management in Buildings
Dr. Rahul Garg, IBM T. J. Watson Research Center	Mar 10, 2011	Brain as a Dynamical System: Novel Approaches to Understanding Brain Function
Prof. Hanan Samet University of Maryland	Mar 28, 2011	Sorting in Space
Dr. John Hopcroft Cornell University	Feb 19, 2011	Computer Science Theory to Support Research in the Information Age
Mr. Rajesh Sharma Walt Disney Corporation	Jan 10, 2011	Design and Development of Animated Movies
Prof. Sandeep Sen IIT Delhi	Jan 20, 2011	A generalized model for update competitive Algorithms
Prof. Venu Govindaraju, University of Buffalo	Dec 21, 2010	Biometrics Security
Prof. Deborah Estrin, UCLA	Dec. 13, 2010	Participatory mHealth
Pramod Chandra Bhatt, Vidha Software Solutions	Nov. 4, 2010	Systemic Thinking for Design
Dr. Aaditeshwar Seth, IIT Delhi	Oct. 28, 2010	Social Media Tools for the Bottom of the Pyramid
Prof. Andreas Zeller, Saarland University	Oct. 21, 2010	Learning from 6,000 projects: Mining Models in the Large
Dr. Thomas Zimmermann, Microsoft Research	Oct 19, 2010	Empirical Software Engineering and Measurement at Microsoft
Dr. Mausam, Univ of Washington	Sept 23, 2010	Compiling a Massive, Multilingual Dictionary via Probabilistic Inference
Dr. Subodh Kumar, IIT Delhi	Sept. 9, 2010	Cache Friendly Compressed Representation of Geometry
Dr. Veena Bansal	Aug 26, 2010	Experiments with Extended Technology Acceptance Model (ETAM)
Prof. Vijay K Vaishnavi	Aug 19, 2010	Design Science Research in Information Technology
Prof. Somenath Biswas, IIT Kanpur	Aug 4, 2010	Necessary and Sufficient Conditions for Success of the Metropolis Algorithm for Optimization

4.5 Internships to other students in IIIT-Delhi

The students from the following Institutions did Internships at IIIT-Delhi:

1. IP University

- 04

2. National Institute of Technology	-	03
3. Netaji Subhas Institute of Technology	-	06
4. LNM Institute of Information Technology	-	02
5. Krishna Institute of Technology & Engineering	-	02
6. Indian Institute of Technology, Kharagpur	-	01
7. Jaypee Institute of Information Technology	-	01
8. Delhi College of Engineering	-	01
9. Indian Institute of Technology, Guwahati	-	02
10. National Institute of Technology, Agartala	-	01
11. PEC University of Technology	-	01

4.6 Professional Service

1. Mayank Vatsa, Richa Singh. Local Arrangements Chair at International Conference on Biometrics, New Delhi, 2012
2. Mayank Vatsa. Session Chair at IEEE Computer Society and IEEE Biometrics Council Workshop on Biometrics at Computer Vision and Pattern Recognition Conference, USA, 2011
3. Amarjeet Singh; Invited by Microsoft India to serve as academic judge for Imagine Cup Finals
4. Amarjeet Singh; Invited by Microsoft India to attend the Microsoft Faculty Connect in Gurgaon
5. Pushpendra Singh; Invited by Microsoft India to serve as academic judge for Imagine cup finals
6. Pushpendra Singh. Invited by Microsoft India to attend the Microsoft Faculty Connect in Gurgaon June, 2011
7. Pushpendra Singh. Publicity chair for Middleware Conference 2010.
8. Pushpendra Singh. Publicity co-chair for PerCom 2012.
9. Pushpendra Singh. Program Committee Member of 3rd International Conference on Mobile Communication Technology for Development (M4D2012).
10. Pushpendra Singh. Program Committee Member of 4th International Conference on Contemporary Computing, 2011
11. Vinayak Naik. Program Committee Member, the 4th International Conference on Contemporary Computing (IC3), IIIT University, Noida, August 8-10, 2011

12. Vinayak Naik. Program Committee Member, Nethealth workshop to be held with COMSNET'10 in Bangalore
13. Vinayak Naik. Program Committee Member, Sensing Technology at the National Exhibition Centre in Birmingham, UK
14. Astrid Kiehn. A member of the programme committee of PNSE'11, International Workshop on Petri Nets and Software Engineering, Newcastle, UK, June 20-21, 2011
15. Gaurav Gupta. Program Committee Member, DFRWS 2011
16. Ponnurangam Kumaraguru. Co-organized a one day workshop on Privacy and Security in Online Social Media, 23 July, 2011. CDAC-Hyderabad.
17. Ponnurangam Kumaraguru. Publicity Co-Chair, Thirteenth International conference on Mobile Data Management, 2012
18. Ponnurangam Kumaraguru. Program committee member for IEEE International Conference on Information Privacy, Security, Risk and Trust (PASSAT), 2011
19. Ponnurangam Kumaraguru. Program committee member for 2nd Workshop on Ubiquitous Crowd Sourcing 2011
20. Ponnurangam Kumaraguru. Program committee member for 3rd International Workshop on Security in Cloud Computing (CloudSec), 2011
21. Ponnurangam Kumaraguru. Program Committee, International Workshop on Security and Privacy in Spontaneous Interaction and Mobile Phone Use, 2011
22. Ponnurangam Kumaraguru - Program Committee Member of IEEE Symposium on Computational Intelligence in Cyber Security (CICS), 2011
23. Shishir Nagaraja - Program Committee Member of PETS 2011, ICISS 2011,
24. Amarjeet Singh - Co-organized 12th International Symposium for Experimental Robotics (ISER), December 18-21, 2010
25. Amarjeet Singh - Co-organized the 1st workshop on Sensor Enabled Situational Awareness (SESA), in conjunction with 12th International Conference on Distributed Computing and Networking (ICDCN), January 2, 2011

5 Awards and Recognitions

1. Mayank Vatsa and Richa Singh. Best Poster Presentation Award at IEEE International Conference on Biometrics: Theory, Applications and Systems, Washington DC, USA, September 2010
2. Himanshu Bhatt received the IBM PhD Fellowship – worldwide about 50 such fellowships were given, out of which about 5 were from India.
3. Kuldeep Yadav received the Microsoft Research India PhD Fellowship – six students from across India are selected each year for this fellowship.
4. Ms. Paridhi Jain, Mr. Anush Sankaran and Ms. Anudha Aggarwal got the TCS PhD fellowships (out of about 20 that TCS gave out)
5. Denzil Correa, Ms. Aditi Gupta, Ms. Paridhi Jain were awarded NIXI Travel Fellowship 2010.

6 Placement and Internships

Placements

Nil

Internships

Name of the Student	University	Project Name
Yash Seth	TTIC-Chicago	
Tanmay Verma	TTIC-Chicago	Max flow / Min Cut Optimization in Vision Problems
Charvi Puri	TTIC-Chicago	Interactive co segmentation on iOS and constructing 3D from 2D
Amar Prakash	TTIC-Chicago	
Ankit Sarkar	West Virginia University	Swarm Intelligence
Gaurav Goswami	West Virginia University	Using Cognitive Methods to Improve Face Recognition
Hemank Lamba	University of Newcastle	Neuroscience - Computation with dynamic neural activity patterns
Kanika Narang	South California University	Strength of Weak Ties in a Social Network
Arjun	EPFL-Switzerland	Software for Portfolio Management for i-Bank

Sumit Arora	EPFL-Switzerland	Software for Portfolio Management for i-Bank
19 other students of IIT Delhi	IIT-Delhi	Various projects with faculty members

7 Financials

7.1 Audited Report and Accounts Statement

7.2 Summary of Accounts

INCOME		
Year	2009 – 2010	2010-2011
Government Grant	150,000,000	50,00,00,000
Fees	10,194,400	2,47,91,042
R & D Grants	15,452,901	1,37,28,424
Donations	4,893,889	30,00,000
Interest	16,581,608	2,22,23,013
Miscellaneous	1,897,214	13,48,145
Total	199,020,012	56,50,90,624

EXPENSES		
Year	2009 – 2010	2010-2011
Salaries	14,566,554	2,91,25,831
Scholarships	225,000	7,00,000
Capital	24,967,741	14,19,29,161
Services	6,793,905	1,12,80,418
Consumables	789,084	16,14,210
Miscellaneous	5,357,349	27,90,750
Total	52,699,633	18,74,40,370

8 Infrastructure and Facilities

8.1 Library Facilities

BOOKS			
Items	2010-2011	Items	2010-2011
Computer Science	521	General	17
Electronics & Communication	95	Political Science	5
Philosophy, Psychology	35	Education	9

Social Science	8	Mathematics	119
Finance	6	Administration	6
Magazines	7		

Most of the reputed research journals are now available through on-line resources such as Springer and INDEST AICTE Consortium for IEL online journals. Many popular journals, news magazines and Indian journals are received as print copies for easy access.

The library is open from 0900 hrs to 0600 hrs from Monday to Friday. The library remains open from 0900 hrs to 0900 hrs on all days during the examinations.

8.2 Computer Laboratory Facilities

IT ASSETS			
Items	2010-2011	Items	2010-2011
No. of Servers	5	Total Bandwidth	1 Gbps
No. of Laptops	34	No. of Projectors	8
No. of Desktops	73	No. of clients in Labs	128
No. of Data cards	7	Total Network Traffic	80 Mbps (approx.)
No. of Printers	36	No. of Scanner	4

8.3 Campus Facilities

The IIIT (Indraprastha Institute of Information Technology)-Delhi Act,2007 endowed the establishment and incorporation of a non affiliating and teaching Institute at 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 its Campus located behind the Phase III Okhla Industrial Estate at a distance of 1 ½ K.M. (approx.) from Okhla railway station, south Delhi

Transit Campus

The IIIT-D started its operations in Sept 2008 from the Transit Campus set up at the part second floor and full third floor areas of the Library block of Netaji Subhash Institute of Technology at Dwarka New Delhi under the aegis of the DTTE, GNCTD. The entire areas have been professionally designed by Interior Architects and all

furniture, equipment and educational aids sourced from reputed vendors to provide a quality ambience for meeting R& D driven education system followed by the IIIT-D.

The third floor caters to spaces for 4 nos of 30 individual seater laboratories, faculty seating on single and twin occupancy basis for 16 single and 3 twin sharing cabins for six faculty, faculty lounge, library areas, research laboratory areas for 3 labs electronics, biometrics, meeting rooms, services and administrative areas apart from indoor play areas for pool, TT etc.

The second floor houses the two research laboratories, 4 classroom spaces for classes with two of 60 and one each of 120 and 30 seater respectively.

The classroom, labs, faculty areas and administrative areas are fully air-conditioned and are catered to by lift from ground floor level.

It currently has four batches of BTech students (approx 60 each), and two batches of PhD students. Its MTech programs also started in 2010.

New Campus under Phase I Construction

The transit campus is under tremendous pressure and is to be shifted to the new Campus by Dec2011. The new campus for the IIIT-D is coming up as the extension of the GB Pant Polytechnic at Okhla Phase III New Delhi on a plot of 25 acres of the 65 acres plot of the Polytechnic earmarked for the purpose.

The sprawling state of the art campus that is spread out over entire land over the sloppy terrain and buildings developed contoured to the topography of the land to be constructed in three phases.

The Phase I consist of the following:

- Academic lecture hall block
- R& D block,
- Resource Centre cum Library building
- Dining block
- Boys Hostel
- Girls hostel
- Dining block
- Faculty Residential building
- Service blocks
- STP

The entire area is divided into mutually interactive yet separate zones namely the residential areas for faculty, academic areas and the student residential areas connected by connecting pathways with vehicular entry restricted to the peripheries only.

There is a single G +11 storied faculty residential block with 27 apartments and 3 guest rooms in the residential zone.

The academic zone comprise of separate blocks for the resource centre cum library in G + 3 storied block, the G+2 Lecture hall block, and the G + 5 storied Research & Development block which would house the research labs, faculty seating, administrative and academic heads with their supporting staff.

The student residential zone comprises of separate blocks for the the boys hostel G+7with 350seats and girls hostel G+4 for 150 seats approx. and a G +3 dining block with cafeteria and mess, student activity areas.

All the above areas excepting for the faculty residences will be served by the district cooling air-conditioning system to be cooled on selective basis during day /night /peak demand settings, housed in the service block. Use of VFD controlled systems, temperature based sensors with BMS controls will run air-conditioning efficiently. Moreover the building envelopes are being made efficient to insulate from heat using dry cladding in external finishes and AAC blocks in place of regular brickwork in masonry.

Use of natural material and minimum use of high energy consuming materials are basic ingredients of the project aim towards green building certification.

The electrical system would be provided with a partial load backup from 2x500kva DG sets.

The entire waste water generated in the campus would be recycled using 2x65 kld STP and water so generated will be used for horticulture, flushing and air-conditioning works.

The entire areas will be protected by fire alarm and fighting equipments as wet risers/sprinklers and smoke management systems.

The telephony and networking will be on a backbone of OFC cabling with redundancy using loop and star configurations.

The entire rock excavated from the areas will be broken down and utilized in external development works. Utilization of energy saving lighting systems, use of non conventional energy through solar hot water systems with PNG backup and will reduce power consumption considerably.

The works of construction are in full swing and all packages for same are likely to be commissioned for Academic zone and part students hostels and dining areas by Nov-December 2011 for partial occupation and faculty residences by Mar2012 with all works completed by June2012.

9 Administration and People

9.1 General Council

Sh. Tejendra Khanna <i>(Hon'ble Lt Governor of Delhi)</i>	Chairman
Dr. Thirumalachari Ramasami <i>(Secretary, Department of Science & Technology)</i>	Member
Dr. V. K. Saraswat <i>(Head, DRDO, SA to RM & Secretary Defense R&D and DG R&D)</i>	Member
Dr. Arabinda Mitra <i>(Executive Director, Indo-U.S. Science and Technology)</i>	Member
Mr. Som Mittal <i>(President, NASSCOM)</i>	Member
Dr. B. K. Gairola <i>(Director General, National Informatics Centre, Ministry of Communications)</i>	Member

9.2 Board of Governors

Mr. Kiran Karnik	Chairman
Mr. Anand Prakash <i>(Principal Secretary, Department of Training and Technical Education)</i>	Member
Prof. B. N. Jain <i>(Vice Chancellor, Birla Institute of Technology and Science)</i>	Member
Mr. D. P. Spolia <i>(Principal Secretary (Finance), Govt. of NCT of Delhi)</i>	Member
Dr. P. Anandan <i>(Chairman and Managing Director, Microsoft)</i>	Member
Prof. Ranjit Roy Chaudhury	Member

(President, Delhi Medical Council)

Prof. Rajeev Sangal **Member**
(Director, IIT Hyderabad)






9.3 Senate

Prof. Pankaj Jalote	Chairman
Mr. Saugat Sen	Member
Mr. C. Anantaram	Member
Mr. Mukesh K Mohania	Member
Prof. K. K. Biswas	Member
Prof. Dheeraj Sanghi	Member
Mr. Dinesha	Member
Mr. Muthusamy Chelliah	Member
Dr. J Siva Swamy	Member
Mr. S. Bahl	Member
Dr. Astrid Kiehn	Member
Dr. Amarjeet Singh	Member
Dr. Debajyoti Bera	Member
Dr. Gaurav Gupta	Member
Dr. Pushpendra Singh	Member
Dr. Saket Srivastava	Member
Dr. Shishir Nagaraja	Member
Dr. Somitra S Sanadhya	Member
Dr. Subhasis Banerjee	Member
Dr. Vinayak S Naik	Member

9.4 Faculty Members

Full time Faculty	
	<p>Amarjeet Singh (Assistant Professor) PhD (2009), Electrical Engineering, University of California, Los Angeles Mobile Sensing, Approximation Algorithms, Environmental Monitoring, Low Cost Technologies amarjeet@iiitd.ac.in+91-11- 2509 9211</p>
	<p>Anirban Mondal (Associate Professor) PhD (2003), Computer Science, National University of Singapore, Singapore Database Management, Multi-dimensional Data Indexing, Mobile Data Management, Spatial DBMS and GIS, P2P Data Management, Data-centric Business Intelligence anirban@iiitd.ac.in +91-11-2509 9203</p>
	<p>Ashish Sureka (Assistant Professor) PhD (2005), Computer Science, North Carolina State University, USA Data Mining, Text Mining, Natural Language Processing ashish@iiitd.ac.in</p>
	<p>Astrid Kiehn (Associate Professor) PhD (1989), Computer Science, Technische Universitat Munchen Logic, Process Algebra, Concurrency Theory astrid@iiitd.ac.in</p>
	<p>Debajyoti Bera (Assistant Professor) PhD (2009), Computer Science, Boston University, USA Quantum Computing, Complexity Theory, Cryptography dbera@iiitd.ac.in</p>
	<p>Gaurav Gupta (Assistant Professor) PhD (2009), Computer Science, Jadavpur University, Kolkata Digital Forensics, Cyber/Information Security gaurav1980@gmail.com</p>
	<p>Mayank Vatsa (Assistant Professor) PhD (2008), Computer Science, West Virginia University, USA Biometrics, Computer Vision, Image Processing, Information Fusion mayank@iiitd.ac.in</p>

	<p>Pankaj Jalote (Professor & Director) PhD (1985), Computer Science, University of Illinois at Urbana Champaign, USA Software Engineering, Fault Tolerance, Distributed Systems jalote@iiitd.ac.in</p>
	<p>Ponnurangam Kumaraguru (Assistant Professor) PhD (2009), Computer Science, Carnegie Mellon University, USA Cyber Crime, Cyber/Information Security, Privacy, Human Computer Interaction pk@iiitd.ac.in</p>
	<p>Pushendra Singh (Assistant Professor) PhD (2004), Université de Rennes, France Middleware, Mobile Computing psingh@iiitd.ac.in</p>
	<p>Raja Sengupta (Associate Professor) (joining August 2011) PhD (2000), Geography, Southern Illinois University at Carbondale, USA Theory and Practice of Geographic Information Science (Spatial Decision Support Systems and Agent-Based Modeling) rsengupta@iiitd.ac.in</p>
	<p>Richa Singh (Assistant Professor) PhD (2008), Computer Science, West Virginia University, USA Biometrics, Machine Learning, Pattern Recognition rsingh@iiitd.ac.in</p>
	<p>Saket Srivastava (Assistant Professor) PhD (2008), Electrical Engineering, University of South Florida, USA Hybrid Nano/CMOS Architecture, Emerging Technologies, Device Modeling and Simulation saket@iiitd.ac.in</p>
	<p>Shishir Nagaraja (Assistant Professor) PhD (2008), Computer Security, University of Cambridge, UK Network Security, Traffic Analysis, Anonymity, Complex Networks nagaraja@iiitd.ac.in</p>
	<p>Somitra Kr. Sanadhya (Assistant Professor) PhD (2009), Computer Science, Indian Statistical Institute, Kolkata Cryptology, Machine learning and Bioinformatics somitra@iiitd.ac.in</p>
	<p>Srikanta Bedathur (Assistant Professor) PhD (2006), SERC, Indian Institute of Science, Bangalore Web and Text Mining, Web Archiving, Large Scale Graph processing, Databases and Information Management bedathur@iiitd.ac.in</p>

	<p>Subhasis Banerjee (Assistant Professor) PhD (2007), Computer Science, Indian Institute of Science, Bangalore Computer Architecture, Performance Modeling of Computer Systems, Low Power Design subhasis@iiitd.ac.in</p>
	<p>Vikram Goyal (Assistant Professor) PhD (2009), Computer Science and Engineering, IIT Delhi Databases, Data Privacy and Security vikram@iiitd.ac.in+91-11-2509 9183</p>
	<p>Vinayak Naik (Assistant Professor) PhD (2006), Computer Science and Engineering, Ohio State University, USA Mobile Computing, Sensor Networks, Wireless Networks, and Systems naik@iiitd.ac.in</p>
VISITING FACULTY	
	<p>Hemant Kumar Founder - Softek Ltd., VP at HCL Tech. BTech(1977), IIT Kanpur Software Development, Compilers, Databases, Inventory Management and Banking Software. hemantk@ieee.org</p>
	<p>Ranendra Narayan Biswas Former Dean, Research and Development, IIT Kanpur and Former Director, CEERI, Pilani, Electronic Circuits, Microprocessor Architecture, Computer Networking rnb@iiitd.ac.in</p>

9.5 Staff Members

Mr. Ashwani Kumar Kansal	-	Deputy General Manager (Administration)
Mr. D. P. Singh	-	Deputy General Manager (Finance & Account)
Mr. Sanjay Roy	-	Project cum Estate Officer
Mr. Vinod Kumar	-	Executive Assistant to Director
Mr. Arun Kumar	-	Assistant Manager (Finance & Account)
Mr. Anuradha Sen	-	Assistant Manager (Admission & Placements)
Mr. Ajay Kumar	-	Assistant Manager (Store & Purchase)
Mr. Anoop Singh	-	Assistant Manager (HR & Support Service)
Mr. Shweta Sachan	-	Assistant Manager (Systems & Networking)
Mr. Vivek Tiwari	-	Assistant Manager (Academics & Student Affairs)

In addition, there are on an average about 14 people working in the Institute on a temporary basis through manpower agencies.

