



ANNUAL REPORT

2012-13



Indraprastha Institute of Information Technology, Delhi Okhla Industrial Area, Phase-III New Delhi-110020, INDIA Tel: +91 11 2690 7400-7404 Fax: +91 11 2690 7405

www.iiitd.ac.in

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

- Our mission is to become a globally respected academic Institution in IT and allied areas by offering
  highly innovative undergraduate, postgraduate and doctoral engineering programs to produce engineers
  of outstanding ability who can become innovators and new product creators.
- To establish strong research groups in Security, Biometrics, Mobile and Ubiquitous Computing, Information Management and Analytics, Telecommunications, Scalable Computing, Electronics Systems, Computational Biology, etc.
- To undertake cutting edge research programs that establish a strong link between academia and industry.
- To encourage innovation and entrepreneurship in specified domain areas of IT. Towards this end, the institute plans to organize itself as a conglomerate of R&D Centres, some of which would be in partnership with different companies and global organizations.

#### 1 Overview

Indraprastha Institute of Information Technology, Delhi (aka. IIIT-Delhi or IIIT-D) was created on 10<sup>th</sup> June, 2008 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.

First class for B.Tech. (CSE) was held on 8th September, 2008 when the Institute began functioning from its transit Campus in NSIT Dwarka with its pioneer batch of 60 students. Since then, it has come a long way with over 35 faculty members specializing in diverse areas of Computer Science and Electronics & Communications Engineering, and nearly 800 students in 4 batches of B.Tech., 2 batches of M.Tech. and 4 batches of Ph.D. All the faculty members are Ph.D. from top Institutes in the world, with about two-thirds of them having Ph.D. from the US or Europe.

The Institute already has one of the strongest Ph.D. programs in Computer Science in the country. Its faculty members and Ph.D. students have won various awards, including Best Paper and Poster awards in national and international conferences. It currently has strong research groups in the following areas:

- Image Analysis & Biometrics
- Emerging Architecture and System Design
- Information Management & Data Analytics
- Security & Privacy
- Mobile Computing & Sensor Networks
- Software Engineering
- Theory

In a relatively short time, the Institute has earned itself a good reputation in India and abroad for being a centre of quality education and research in IT and allied areas.

### **Campus**

The Institute moved in to its main campus at Okhla in August 2012. The phase-I of the construction of the IIIT-D's permanent campus is complete, with 30,000 sq m of building space for its functioning, including a Faculty and Research block for 50 faculty members and eight research centres; three big lecture halls with a total capacity of 500, two more which can accommodate a total of 120 students and five smaller ones with an overall capacity of 150; a recreation centre, a boys' hostel and a girls' hostel along with playing areas; and a Service block.



The Academic Block of the Institute houses Faculty offices, Director's Room, Board Room, Conference Room, Faculty Lounge and offices for administrative staff. The Faculty and Research wing is also accommodating Ph.D. rooms and M.Tech. labs. Besides, there are seating areas to foster discussions and for sharing of thoughts.

The IIIT-D's campus also houses a Library and Information Centre, which has a common study area for students on the ground floor, a state of the art RFID-enabled library on the first floor and several labs on the upper floors.



Phase-I Campus ACADEMIC ZONE



**Academic Block** 



**Library Block** 

The Dining and Recreation centre, which is just close to the boys' and girls' hostel, contains a students' mess, which is spread over two floors, a cafeteria and facilities for extra co-curricular activities, such as music room and gymnasium.

# Phase-I Campus HOSTEL ZONE







**Boys Hostel** 



**Dining Block** 

#### Formal Inauguration of the institute's Campus

Though the IIIT Delhi moved in to its permanent campus at Okhla in August 2012, its formal inauguration was held on 29<sup>th</sup> October, 2012 in the presence of Smt. Sheila Dikshit, Hon'ble Chief Minister of Delhi; Shri P.K. Tripathi, Chief Secretary of Delhi; and Shri Kiran Karnik, Chairperson, Board of Governors, IIIT Delhi.

During her address, the Chief Minister affirmed the Delhi Government's commitment to the development of our institute, emphasising that there would not be any dearth of funds in this regard.



CM inaugurating IIIT-D's new campus



CM's address during inauguration of campus

#### **Infrastructure**

FMS and Security System: The IIIT-D has rolled out efficient FMS and security system in the campus, which is fitted with state of the art CCTV Camera surveillance to enhance and monitor security. In total Nine Pan-Tilt-Zoom (PTZ) external cameras are placed at strategic locations and 64 Fixed Dome internal cameras have been installed. The system has become fully operational with 24X7 monitoring from a centralized location provided with large LED screens and Digital Video Recording system. The deployment of CCTV surveillance has considerably reduced the cost on physical security and also reduced the intrusion by unwanted elements into the campus. It has also assisted in the investigation of theft cases.

**Smart Energy Management System:** With energy conservation at its core, smart electricity meters have been installed at the buildings in the campus under an ambitious project to study the power consumption pattern so that attention can be paid to saving electricity and utilising it in a proper manner. Under this project, comparison can be made between the power consumption by different blocks within a single building, and electricity bills showing item-wise consumption can also be produced.

#### Internet

IIIT-D has truly world class, campus-wide state of the art information technology tools that are designed to meet the computing and communication needs of the Institute, which has a fast, reliable and rugged computer network of more than 400 Nodes. The Institute has more than 100 laptops issued to its faculty, staff and students. To provide printing and other facilities, the Institute has 91 printers and scanners. In order to facilitate proper teaching aid, all classrooms are equipped with projectors and audio systems. All the hostels, faculty blocks, the administrative block and classrooms are connected through redundant 10-gigabit fibre backbone. Apart from these, all the blocks are connected through layer 2 & 3 switches to provide 1 gbps connectivity at the user end. Every hostel room has a dedicated LAN connection on the Institute's network to provide round the clock access to resources on the net. Wireless network with 82 access points is also enabled in the faculty block, Library, classrooms and hostel blocks.

## **Current Degree Programs**

IIIT Delhi currently has the following programs in Computer Science & Engineering (CSE) and Electronics & Communications Engineering (ECE):

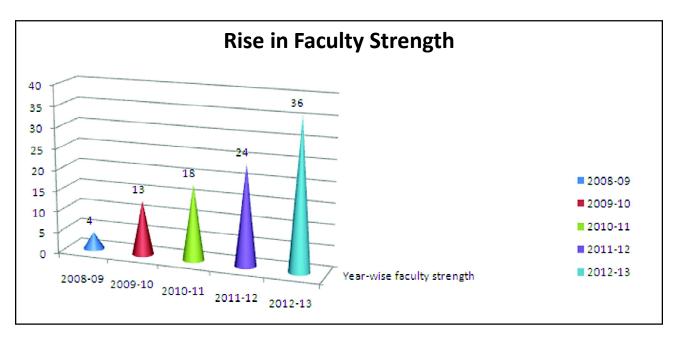
- B.Tech. in CSE and ECE It prepares students to undertake careers involving innovation and problem solving using Information Technology, and helps them undertake advanced studies for research careers in Information Technology and allied areas.
- M.Tech. in CSE and ECE This program is aimed at providing specialized skills for top positions in industry and also prepares students for a career in research.
- **Ph.D. in CSE and ECE** It is focused on top-class research.

## **Faculty**

Our faculty strength now stands at 36 as 15 new faculty members joined the institute since June 2012, while three left in the last academic year. Following are the names of the faculty members who became

part of the Institute June 2012 onwards, with most of them holding Ph.D. from prestigious universities in the US:

- Sujay Deb Ph.D. from the Washington State University
- H B Acharya Ph.D. from the University of Texas, Austin
- Rajiv Raman PhD from the University of Iowa
- Haimonti Dutta Ph.D. from the University of Maryland, Baltimore County
- Shobha Sundar Ram Ph.D. from the University of Texas, Austin
- Apala Guha Ph.D. from the University of Virginia, Carlottesville
- Rahul Purandare Ph.D. from the University of Nebraska, Lincoln
- AV Subramanyam Ph.D. from Nanyang Technological University, Singapore
- Vivek Bohara Ph.D. from Nanyang Technological University, Singapore
- PB Sujit Ph.D. from the Indian Institute of Science, Bangalore
- Alexander Fell Ph.D. from the Indian Institute of Science, Bangalore
- Dong Hoon Chang Ph.D. from the Korea University;
- Ashwin Sriniwasan Ph.D. from the University of New South Wales, Sydeny
- Angshul Majumdar Ph.D. from the University of British Columbia, Canada
- Sandip Aine Ph.D. from IIT Kharagpur.



#### **Administrative Staff**

Like its faculty, the Institute's administrative staff strength too has risen substantially, with a total of 25 people recruited so far for the smooth functioning of the Institute. Out of these 25, 10 have joined since April last year while three others resigned during the same period. In addition, we have a total of 48 support staff in FMS, 39 in security and 15 other contractual workers.

### **Student Strength**

The Institute's total student strength has climbed to 794, with 539 students pursuing B.Tech.; 187 M.Tech. and 68 Ph.D. A total of 171 new students were admitted to B.Tech. (CSE) and B.Tech. (ECE); 110 to M.Tech.; and 68 to the Ph.D. programme this year. A total of 51 B.Tech. students and 22 M.Tech. students graduated last year.

### **Research Funding**

The Institute's faculty members continue to pursue top quality research. A total of 102 of their papers have been published/accepted in international journals and conference proceedings. Overall 29 proposals of faculty members have been approved for funding by various agencies for a combined R&D project funding commitment of Rs. 74,299,440.00, with top funding agencies being DST, DeIT and DRDO. Out of these 29 sponsored projects, eight have been added since April last year, three closed in the last academic year and rest have been ongoing.

#### **Awards**

Our faculty and students have received numerous awards for their papers and posters. Many have also been granted prestigious research grants and fellowships across the world such as the Prime Minister's Fellowship for Doctoral Research and IBM and TCS Fellowship Awards.

Last year, three of our young faculty members got the DST's Inspire fellowship. Our faculty and PhD students received over 10 best paper or poster awards and 12 TCS PhD fellowships. Our students were able to crack the Microsoft India's coveted 'Whodunit? Challenge' as also the Planning Commission's Hackathon. They also won FICCI's 'Strengthening the Policing Contest 2013 – Ensuring Women Safety in India'.



**FICCI CONTEST WINNERS** 

**Denzil Correa, Hackathon Winner** 

#### **Convocation**

On November 3, 2012, we had our first Convocation in our new campus in Okhla. A total of 51 B.Tech. and 22 M.Tech. degrees were awarded.

Gracing the occasion with their presence were Chief Guest Shri N Narayana Murthy, founder of Infosys; the then Lt Governor of Delhi Tejendra Khanna; and Shri Kiran Karnik, the Chairman of the institute's Board of Governors.

In his inspiring address, Mr Murthy exhorted students to imbibe fundamentals of education as instruments to solve problems around them, while IIIT-D Director, Prof Pankaj Jalote, enlightened the audience with information about the institute's journey so far.



**Chief Guest Mr Murthy with LG at Convocation** 

**Prof Jalote addressing the convocation** 

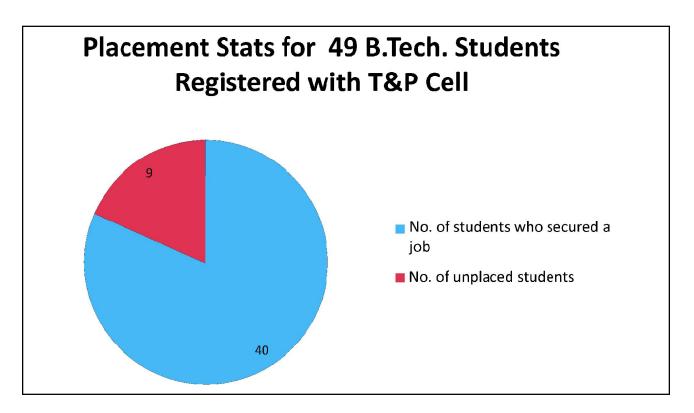
### **Placements**

After the successful placement of the first graduating batch of IIIT Delhi, the B.Tech. 2009 and the M.Tech. 2011 batches have also fared fittingly. The sterling placement statistics of our Institute stand testimony to the fact that our graduates have the best combination of strong technical background and excellent soft skills. Even prior to the placements, many students of the B.Tech. and M.Tech. batches had done internships in international universities, IT industry specific R&D labs and IT companies during the summers of 2012.

- Some of the companies that visited our Institute include Microsoft India, Google, Adobe, Accenture and IBM.
- Students got domestic as well as international job offers. The highest salary offered for a job in India in the case of B.Tech. batch was Rs 16 lakh per annum, while for M.Tech., it was Rs 7 lakh per annum.

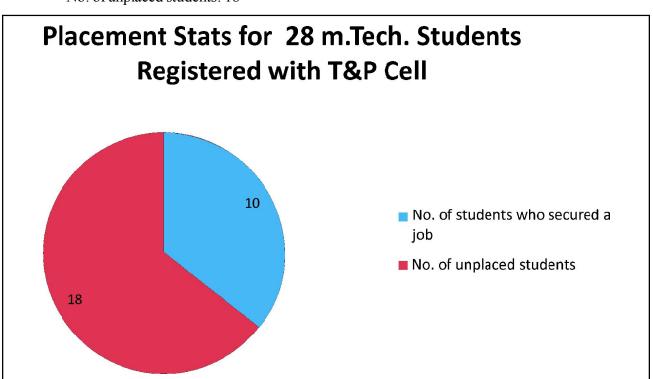
#### Placement Statistics for B. Tech. Students Graduating in 2013

- Total no. of students: 56
- No. of students Registered with T&P cell: 49
- No. of students who opted out to pursue higher studies: 7
- No. of students who secured a job: 40
- No. of unplaced students: 9



### Placement Stats for M.Tech. Students graduating in 2013

- Total no. of students: 33
- No. of students registered with T&P cell: 28
- No. of students who opted out to pursue higher studies: 5
- No. of students who secured a job: 10
- No. of unplaced students: 18



#### Media mention

Our Institute continues to hit headlines, with its events like Research Showcase and international workshops making it to various media outlets, along with articles on the innovative and interesting research work being carried out by a focused faculty and equally talented students. Some of the prominent media organisations 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. Following is a list of stories on IIIT-D that appeared in media since October last year:

• IIIT Delhi Moves to New Campus in Okhla (**The Hindustan Times**)
New Delhi, Oct 30, 2012: Students of the Indraprastha Institute of Information Technology (IIIT-Delhi) will no longer have to attend classes in its temporary centre at the Netaji Subhash Institute of Technology. Delhi Chief Minister Sheila Dikshit on Monday inaugurated the IIIT-Delhi campus in South Delhi's Okhla.

(<a href="http://www.hindustantimes.com/India-news/NewDelhi/IIIT-Delhi-moves-to-new-campus-in-Okhla/Article1-951991.aspx">http://www.hindustantimes.com/India-news/NewDelhi/IIIT-Delhi-moves-to-new-campus-in-Okhla/Article1-951991.aspx</a>)

• Reinvent Learning that Supports Innovation: Murthy (**The Hindu Business Line**)
New Delhi, Nov 3, 2012: Despite making landmark advances, the Indian software industry has failed to support the growth of its own inventions, Infosys founder Narayana Murthy said today at IIIT-D's first convocation, asking students to reinvent their idea of education to end this anomaly.

(http://www.thehindubusinessline.com/industry-and-economy/education/reinvent-learning-that-supports-innovation-narayana-murthy/article4061987.ece)

• Most Indians ignorant about privacy issues on Internet, Social Media: IIIT-D Study (The Economic Times)

NEW DELHI, Dec 9, 2012: Giving an insight into privacy perceptions in India in the wake of huge development in the IT sector, one of the first studies on the subject conducted by IIIT-D says a majority of people are ignorant about various privacy issues related to the Internet and online social media, including Facebook.

(http://articles.economictimes.indiatimes.com/2012-12-09/news/35705476\_1\_privacy-issues-personally-identifiable-information-privacy-invasion)

• IIIT-D PhD Scholars win Microsoft's Whodunit? Challenge (India Education Review)
New Delhi, Feb 5, 2013: A team of Indraprastha Institute of Information Technology, Delhi (IIIT-D) researchers has emerged victorious in Microsoft Research India's nationwide Whodunit? Challenge.

(http://www.indiaeducationreview.com/news/iiit-d-phd-scholars-win-microsoft%E2%80%99s-whodunit-challenge)

• Engineering students showcase research work (**IBN**)

New Delhi, Mar 15, 2013 (PTI) Work of engineering students in the field of computer science and electronics research was today showcased in an event organised by Indraprastha Institute of Information Technology (IIIT).

(<a href="http://ibnlive.in.com/generalnewsfeed/news/engineering-students-showcase-research-work/1219416.html">http://ibnlive.in.com/generalnewsfeed/news/engineering-students-showcase-research-work/1219416.html</a>)

• India, British Experts Discuss Cyber Security (The New Indian Express)

NEW DELHI, 26th March 2013 (IANS) Top experts from India and Britain discussed cyber security and online security, a pressing international issue demanding global cooperation, as part of a four-day workshop, which began on March 24 and which has been jointly organised by Research Councils UK (RCUK) and India's department of science and technology, the Indraprastha Institute of Information Technology-Delhi (IIIT-D), and Britain's Science and Innovation Network (SIN).

(http://newindianexpress.com/nation/article1518154.ece)

- IIIT Delhi gets into collaborative PhD programme with QUT Australia (**The Times of India**)

  NEW DELHI, Apr 15, 2013: The Delhi government-created Indraprastha Institute of Information Technology (IIIT-D) has joined hands with Australia's Queensland University of Technology (QUT) for a collaborative PhD programme in areas like Cryptography, Control Theory and Robotics, as part of efforts to promote cooperative educational exchanges.

  (<a href="http://articles.timesofindia.indiatimes.com/2013-04-15/news/38555330\_1\_phd-student-programme-information-technology">http://articles.timesofindia.indiatimes.com/2013-04-15/news/38555330\_1\_phd-student-programme-information-technology</a>)
- IIIT-D develops system that monitors, analyses real-world events online (**The Times of India**)

  New Delhi, May 28: Researchers at the IIIT-D have come up with a new system called MultiOSN, which has been monitoring multiple online social media during real-world events, including the just-concluded IPL series, and presenting an analysis in real-time.

  (<a href="http://articles.timesofindia.indiatimes.com/2013-05-28/news/39579015\_1\_sentiment-analysis-ipl-boston-marathon-blasts">http://articles.timesofindia.indiatimes.com/2013-05-28/news/39579015\_1\_sentiment-analysis-ipl-boston-marathon-blasts</a>)
- Demand for PhD in computer science hit by lack of scholarships (The Economic Times)
   New Delhi, Jun 16 (PTI): Attracting quality students to pursue doctoral degree in computer science is one of the major challenges faced by India's top technical institutes due to lack of lucrative scholarships and fellowships, according to a survey conducted by Prof Pankaj Jalote, Director of the Indraprastha Institute of Information Technology (Delhi).
   (http://articles.economictimes.indiatimes.com/2013-06-16/news/40009109\_1\_computing\_machinery-phd-students-computer-science

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

### 2 Education

### 2.1 Current Academic Programs

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, 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.

#### 2.2 Student Intake and Total Student Strength

1) B.Tech. (Student intake): 171 (CSE 121+ ECE 50)

Total student strength: 539

2) M.Tech. (Student intake): 110 (CSE 80 + ECE 30)

Total student strength: 187

3) Ph.D. (Student intake): 24 (CSE 04+11 Direct M. Tech. + ECE 9)

Total student strength: 68

Average class XII maths score for the new B.Tech. batch is 94.13 Average class XII total score for the new B.Tech. batch is 88.53

#### 2.3 Students Graduated

The Institute had its first convocation on November 3, 2012, at its new campus in Okhla. A total of 51 B. Tech. and 22 M. Tech. degrees were awarded at the event in the presence of Chief Guest Shri N Narayana Murthy, founder of Infosys; Shri Tejendra Khanna, the then Lt. Governor of Delhi and Chancellor of IIIT Delhi; Shri Kiran Karnik, the Chairman of the institute's Board of Governors; and Prof Pankaj Jalote, the Director of the IIIT-D.

### 2.4 Courses Taught

During the past year, following courses were offered by the institute. Most of the advanced level courses were designed to meet the demands of the latest advances in technologies in IT and related areas.

### **Computer Science and Engineering Course**

CSE111: Digital Circuits (Prof R N Biswas)

CSE101: Introduction to Programming (Dr Gaurav Gupta)

CSE131: System Management (Dr Amarjeet Singh)

CSE231: Operating Systems (Dr Pushpendra Singh)

CSE201: Advanced Programming (Dr Srikanta Bedathur)

CSE121: Discrete Mathematics (Dr Astrid Kiehn)

CSE300: Software Engineering (Dr Ashish Sureka)

CSE546: Applied Cryptography (Dr Somitra Sanadhya)

CSE511: Computer Architecture (Dr Subhasis Banerjee)

CSE310: Digital Hardware Design (Dr Saket Srivastava)

CSE535: Mobile Computing (Dr Vinayak Naik)

CSE345/CSE545: Foundations of Computer Security (Dr Gaurav Gupta)

CSE343/543: Machine Learning (Dr Richa Singh)

CSE320/520: Advanced Algorithms (Dr Debajyoti Bera)

CSE340/540: Image Analysis (Dr Mayank Vatsa)

CSE694E: Geospatial Data Management (Dr Raja Sengupta)

CSE501: Designing Human-Centered Systems (Dr Ponnurangam Kumaraguru)

CSE506: Data Mining (Dr Anirban Mondal)

CSE694D: Privacy in Location-based Services (Dr Vikram Goyal)

CSE507: Database Systems Implementation (Dr Vikram Goyal)

CSE648: Privacy and Security in Online Social Media (Dr Ponnurangam Kumaraguru)

CSE649 Network Protocol Security (Dr Hrishikesh Acharya)

CSE693A: Logic Programming and Learning (Dr Ashwin Srinivasan)

CSE620: Theory and Practice of Cryptography (Dr Donghoon Chang)

CSE102: Data Structures and Algorithms (Dr Mayank Vatsa)

CSE112: Computer Organization (Dr Subhashis Banerjee)

CSE202: Introduction to Database Management Systems (Dr Ashish Sureka)

CSE222: Analysis and Design of Algorithms (Dr Debajyoti Bera, Dr Rajiv Raman)

CSE232: Computer Networks (Dr Vinayak Naik)

CSE330/530: Distributed Security Systems (Dr Acharya H B)

CSE337/537: Embedded Systems (Dr Amarjeet Singh)

CSE342/542: Pattern Recognition (Dr Richa Singh)

CSE440: Intelligent Systems-I (Dr Ashwin Srinivasan)

CSE441/541: Advanced Biometrics (Dr Richa Singh)

CSE508: Information Retrieval (Dr Srikanta Bedathur)

CSE522: Verification of Reactive Systems (Dr Astrid Kiehn)

CSE531: Multiagent Systems (Dr Sujit PB)

CSE538: Ad-Hoc Wireless Networks (Dr Sanjit Kaul)

CSE608: Distributed Data Mining (Dr Haimonti Dutta)

CSE645: Digital and Cyber Forensics (Dr Gaurav Gupta)

CSE694F: Multimedia Security (Dr Subramanyam AV)

CSE734: Advanced Topics in Mobile Computing (Dr Pushpendra Singh)

CSE793A: Topics in Cryptanalysis (Dr Donghoon Chang)

#### **Engineering Science Courses**

ESC201: Transducers and Signal Conditioning (Ms Girisha Garg-Guest Faculty))

ESC202: Digital Communication (Dr Gangadharappa-Guest Faculty))

ESC205: Environmental Sciences (Dr Pankaj Mehta-Guest Faculty))

ECE512: Introduction to VLSI Design (Dr Sujay Deb)

ECE501: Probability and Random Processes (Dr Sanjit Kaul)

ECE520: Analog Circuit Design (Dr Mohammad S Hashmi)

ECE531: Operating Systems (Dr Vinayak Naik)

DES130: Introduction to Engineering Design (Dr Saket Srivastava, Dr Pravesh Biyani, Dr Sujay Deb, Dr

Sanjit Kaul, Prof R N Biswas)

ECE521: RF Circuit Design (Dr Mohammad S Hashmi)

ECE616: Advanced FPGA Design (Dr Saket Srivastava)

ECE511: Computer Architecture (Dr Subhasis Banerjee)

ECE510: Digital Hardware Design (Dr Saket Srivastava)

ECE715: System-on-Chip Design and Test (Dr Sujay Deb)

ECE729: Advanced Signal Processing (Dr Angshul Majumdar)

ESC205: Environmental Sciences (Dr Suresh Jain-Guest Faculty)

ESC206: Computational Genomics (Dr Dhruv Grover-Visiting Faculty)

ENT402: Entrepreneurship: Managing a Venture (Mr Hemant Kumar)

ENT401: Entrepreneurship (Mr Hemant Kumar)

#### **Humanities & Social Science Courses**

HSS101: Technology and Society (Dr Leon Morenas-Guest Faculty)

HSS204: Introduction to Psychology (Dr Arvinder Kaur/ Ms Manasi Jain-Guest Faculty)

HSS205: Introduction to Sociology (Dr Duru Arun Kumar-Guest Faculty)

HSS206: Introduction to Film Studies (Ms Parul Tyagi-Guest Faculty)

HSS208: Theory and Practice of Engineering Ethics (Ms Shachi Yadav-Guest Faculty)

HSS209: Music Appreciation (Mr Vikram Lall-Guest Faculty)

#### **Other Courses**

Math100: Mathematics I (Mr Anurag Sahai-Guest Faculty)) (Dr Sriram K after Mid Sem)

MTH201: Probability and Statistics (Dr Ponnurangam Kumaraguru)

MTH202: Mathematics: Algebra (Prof Samaresh Chatterji)

MTH502: Number Theory (Dr Somitra Sanadhya)

PHY302: Semiconductors and Optics (Prof Subhash Chopra-Guest Faculty)

PHY301: Physics (Prof Subhash Chopra-Guest Faculty)

COM101: Communication Skills (Ms Rekha Shorey, Mr K M Pathi-Guest Faculty)

COM201: Critical Reading (Ms Parul Tyagi/Mr K M Pathi-Guest Faculty)

COM 301: Technical Communication (Prof Pankaj Jalote, Mr Hemant Kumar, Dr Debajyoti Bera)

COM333: Organizational Behavior (Mr K M Pathi-Guest Faculty)

ECO301: Introduction to Economic Analysis (Dr Shreemoy Mishra)

ECO303: Economics in Information and IT (Dr Shreemoy Mishra)

ECO302: Applied Econometric Analysis (Dr Shreemoy Mishra)

BIO505: Introduction to Computational Neuroscience (Dr Sriram K)

BIO501: Systems Biology (Dr Sriram K)

#### 3 Research and Development

B.Tech., M.Tech. and Ph.D. projects contribute significantly to the academic research, the major outcome of which is development of technologies that are deployed in various IT-related domains. IIIT-D faculty members remain engaged in research activities and have published in various national and international journals and conference proceedings. Besides, IIIT-D gives high importance to research and development (R&D) and consultancy sponsored by various national and international organizations that sustains meaningful collaborations between academia and industry. In the following section, the technologies developed, research grants obtained, consultancy projects undertaken, the papers published in peer reviewed journals and conference proceedings are highlighted.

### 3.1 Technologies Developed / Deployed

- 1. IVR systems developed to help low-literate people from rural background access information about jobs under National Rural Employment Guarantee Scheme (NREGS). The system is currently in use in Gattu district in Andhra Pradesh and is being used by thousands of people. Such a system has also been deployed at the Lucknow-based NGO "Digital Study Hall" (A UWash initiative) to help students connect with teachers.
- 2. A mobile application (built on top of ODK) developed to collect demographic information of the IVR users and sync it with the server. Tablets with these applications were given (and are still being used) to field workers for data collection from several villages.
- SMS-based systems developed and deployed at several locations in Maharastra with an aim to help low-literate people from rural background access information about Healthcare schemes by the government.
- 4. A billing module developed for an NGO Raxa (raxa.org) which is developing an open source medical record system to be deployed in tribal hospital in Chattisgarh
- A system for vehicular tracking developed for Husk Power Systems. This project is currently under expansion and discussions are ongoing with Husk Power System for initial deployment on all their vehicles.
- 6. A system for Time and Presence Based monitoring and control developed for Telecommunication Consultants India Limited (TCIL), whose staff is being trained for deploying the system on their own and they have plans to extend the system for large scale deployment in their building.
- 7. WiFi share: It is an innovative mobile app which enables adhoc file transfer between two or more android phones using wireless hotspot technology provided by today's phones and does not depend on any intermediary infrastructure. Using WiFiShare, files are transferred in few steps with a transfer speed of 1.5-2.5 MBps (More than 5000 installations of WiFi share have already been done).
- 8. Digital Forensic Lab established in IIIT Delhi with state of the art tools like Encase Enterprise with 10 unique logins.
- 9. Twit-Digest: Real-time Twitter search portal for extracting, tracking and visualizing information. http://precog.iiitd.edu.in/Twit-Digest. It is currently deployed in three user agencies.
- 10. PhishGuru: A System for Educating Users about Semantic Attacks.
- 11. Anti-Phishing Phil: A game that teaches people how to identify malicious links and URLs.
- 12. Biometric Quality Assessment Tool (Ver. 2) for Army Research Laboratory, Department of Defense, USA: It can be used for evaluating the quality of face, fingerprint and iris images in terms of both image quality and biometric quality for determining the failure to enroll and failure to process cases.
- 13. Context Switching Tool for Multimodal Biometric Fusion (Version 1.1) for Army Research Laboratory, Department of Defense, USA: In a multimodal biometric framework with iris, fingerprint and face modalities, the tool is used to determine which biometric modality to select for verification/

- identification whether unimodal or multimodal. If multimodal is selected, the tool also determines which fusion algorithm to select.
- 14. Face Recognition Tool (Version 2 final) for DIT, India: The tool consists of face image quality, pre-processing, detection, and recognition algorithms.
- 15. A low cost single lead ECG recording system developed.
- 16. WiFiShare: An Android, which so far had 9,436 downloads.
- 17. Fourteen applications from Mobile Computing course, which was offered in Monsoon'12 semester, were published in Android and Windows Phone App Stores. B. Tech. student S Singhal's app had more than 12K downloads in three months and another B. Tech. student A Saini's app was listed "The best Impressive and New App on App Flow" and featured on WP7 market.
- 18. Indigenously developed low-cost SMS (GSM to IP) Gateway was provided to IBM Research Labs (IRL), India for their National University Challenge 2012: Build Smarter Cities.

#### 3.2 Patents

Dr Ashish Sureka's previous work at the Infosys led to the grant of the following patents:

- 1. United States Patent: 8489530 (Granted on July 16, 2013)
- 2. United States Patent: 8468155 B2 (Granted on June 18, 2013)

Both the patents are based on his work at Infosys (where Infosys was the assignee and IP owner, while Dr Sureka was the inventor). One of the patents (8489530) is on a method to mine automotive warranty claim data for effective root cause analysis (automotive domain). The other patent (8468155 B2) is on improving a recommendation algorithm. Both the works/patents were done within the Information Management group at Infosys Labs.

#### 3.3 Sponsored / Consultancy Projects

#### **Sponsored Research Projects**

- 1) Design and development of System for Detecting Digitized Document Frauds; PI: Dr Gaurav Gupta; Funding Agency DeIT; Amount sanctioned: Rs 8,112,000.00; Duration: 36 months
- 2) Design and development of a Mobile Device Centric environment Healthcare Delivery; PI: Dr Pushpendra Singh; Funding Agency: DeIT; Amount sanctioned: Rs 4,680,000.00; Duration: 36 months.
- 3) Analyzing & Measuring Trustworthiness of User-Generated Content & Users on Multiple Online Social Media to Counter Cybercrime; PI: Dr Ponnurangam Kumaraguru; Funding Agency: DeIT; Amount sanctioned: Rs 7,500,000.00; Duration: 24 months
- 4) MAX Planck Partner Group: Search and Mining over Large Scale Graphic; PI: Dr. Srikanta Bedathur Jagannath; Funding Agency: DST: Indo-German Science & Technology Centre; Amount sanctioned: Rs 4,050,000.00; Duration: 36 months
- 5) CAIR: Working out Indistinguishability Metrics for short Sequence Generation System; PI: Dr. Somitra Kr. Sanadhya; Funding Agency: DRDO; Amount sanctioned: Rs 950,000.00; Duration: 36 months

- 6) Correlating Differential Power with Program Behaviour: An analysis of Side Channel in Smart Card; PI: Dr.Subhasis Banerjee; Funding agency: CARS: DRDO; Amount sanctioned: Rs 1,416,000.00; Duration: 12 months
- An Inter-Disciplinary Approach Toward building Ontology for Online Extremism; PI: Dr Ponnurangam Kumaraguru; Funding Agency: DST-Indo-Ireland; Amount sanctioned: Rs 684,000.00; Duration: 24 months
- 8) Analysis of Ad-hoc Networks; PI: Dr Pushpendra Singh; Funding Agency: SAG:DRDO; Amount sanctioned: Rs 1,500,000.00; Duration: 15 months
- 9) Recognizing Surgically Altered Face Images for Security Application; PI: Dr Richa Singh; Funding Agency: DST: Fast Track; Amount sanctioned: Rs 1,369,000.00; Duration: 36 months
- 10) Development and Evaluation of Mobile Learning Techniques for Indian Masses; PI: Dr Pushpendra Singh; Funding Agency: DST: Fast Track; Amount sanctioned: Rs 511,000.00; Duration: 36 months
- 11) International Development Research Centre, Canada and Privacy International, UKPrivacy In India; PI: Dr Ponnurangam Kumaraguru; Funding Agency: Privacy International; Amount Sanctioned: Rs 2,055,973.00; Duration: 24 months
- 12) Design and cryptanalysis of some Cryptographic primitives; PI: Dr.Somitra Kr.Sanadhya; Funding Agency: Naval Research Board: DRDO; Amount sanctioned: Rs 2,520,000.00; Duration: 36 months
- 13) Reengineering existing Application for Multicore Services; PI: Dr Subhasis Banerjee; Funding Agency DST; Amount sanctioned: Rs 3,176,000.00; Duration: 36 months
- 14) User Controlled information Dissemination for Security and Privacy in Location Based Services; PI: Dr. Vikram Goel; Funding Agency: DST: Fast Track; Amount sanctioned: Rs 516,000.00; Duration: 36 months
- 15) Effective Economy Based Dissemination Of Information in a Mobile P2P environment for providing Valuable Social Service; PI: Dr.Anirban Mandal; Funding Agency: DST: Fast Track; Amount sanctioned: Rs 228,000.00; Duration: 36 months
- 16) Research and Design of Face Recognition System for Variations in Pose, Expression and Illumination; PI: Dr Richa Singh; Funding Agency: DeIT; Amount sanctioned: Rs 8,725,000.00; Duration: 36 months
- 17) How Should I Fix Bug?-Investing Text Analytics and Social network Analysis Based Approaches to Support a Practitioner in Bug Fixing; PI: Dr Ashish Sureka; Funding Agency: DST: Fast Track; Amount sanctioned: Rs 342,000.00; Duration: 36 months
- 18) Analyzing Online Content using Data Mining Techniques to Counter Cyber Crime-Under Cyber Security grant-in Aid programme; PI: Dr Ponnurngam Kumaraguru; Funding Agency: DeIT; Amount sanctioned: Rs 8,150,000.00; Duration: 36 months
- 19) Research and Exploration in Support of the proposed Project Title Use of cell phone for detecting and Controlling Infectious Diseases from National Geographic Society; PI: Dr Vinayak Nayak; Funding Agency: National Geographic Society; Amount sanctioned: Rs 986,960.00; Duration: 12 months

- 20) Statistical Evaluation and Recognition of Simultaneous Latent Fingerprint Impression; PI: Dr Mayank Vatsa; Funding Agency: DST: Fast Track; Amount sanctioned: Rs 558,000.00; Duration: 36 months
- 21) Building a CMM like model for assessing the maturity of E-Governance; PI: Prof Pankaj Jalote; Funding Agency: NISG; Amount sanctioned: Rs 700,000.00
- 22) Grant for Research in Computer Science; PI: Prof Pankaj Jalote; Funding Agency: Microsoft; Amount sanctioned: Rs 420,000.00
- 23) Microsoft Grant for Computer Science; PI: Prof Pankaj Jalote; Funding Agency: Microsoft; Amount sanctioned: Rs 1,849,507.00

## **Consultancy Projects**

- 1. Consultancy Services provided for Investigation of letters/envelops for authorship analysis; PI: Dr Gaurav Gupta; Funding Agency: National Highway Authority of India; Amount sanctioned: Rs 60,000
- 2. Mining Software Repositories; PI: Dr Ashish Sureka; Funding Agency: Accenture Services Pvt Ltd; Amount sanctioned: Rs 1,20,000
- 3. Time and Presence Based Energy Control and Management; PI: Dr Amarjeet Singh; Funding Agency: Telecommunication Consultants India Pvt Ltd; Amount sanctioned: Rs 2,00,000

### Other Support/Grant

- 1) DST/INSPIRE Faculty Award/2012 (fellowship); PI: Dr Angshul Majumdar; Funding Agency: DST; Amount sanctioned: Rs 3,500,000.00; Duration: 5 years
- 2) DST/INSPIRE Faculty Award/2012 (fellowship); PI: Dr Sujay Deb; Funding Agency: DST; Amount sanctioned: Rs 3,500,000.00; Duration 5 years
- 3) DST/INSPIRE Faculty Award/2012 (fellowship); PI: Dr Pravesh Biyani; Funding Agency: DST; Amount sanctioned: Rs 3,500,000.00; Duration: 5 years
- 4) Ramanujan Fellowship; PI: Prof Ashwin Srinivasan; Funding Agency: DST; Amount sanctioned: Rs 2,800,000.00; Duration: 4 years

### 3.4 Research Publications

#### Refereed Books/Journals

- 1) F. M. Ghannouchi and **M. S. Hashmi**, "Load-Pull Techniques with Applications to Power Amplifier Design" (published in July 2012). Springer Series on Advanced Microelectronics ISBN 978-94-007-4461-5
- 2) **M. S. Hashmi**, and F. M. Ghannouchi, "Introduction to Load-Pull Systems and their Applications," IEEE Instrumentation and Measurement Magazine, Feb. 2013.
- 3) K. Rawat, **M. S. Hashmi**, and F. M. Ghannouchi, "*Dual-band Branch-Line Hybrid With Distinct Power Division Ratio Over the Two Bands*," Wiley International Journal of RF and Microwave Computer-Aided Engineering, Vol. 23, Issue-1, pp. 90-98, **Jan. 2013.**

- 4) W. S. El-Deeb, **M. S. Hashmi**, N. Boulejfene, and F. M. Ghannouchi, "Systematic Calibration of Two-port Network Analyzer for Measurement and Engineering of Waveforms at Radio Frequency," Progress in Electromagnetic Research, Vol. 28, pp. 209-222, **April 2012.**
- 5) K. Rawat, M. S. Hashmi, and F. M. Ghannouchi, "Dual-band Doherty Power Amplifier Optimization," IEEE Microwave Magazine, Vol. 13, No. 2, pp. 69-82, April 2012.
- 6) K. Rawat, M. S. Hashmi, and F. M. Ghannouchi, "Dual-band RF Circuits and Systems for Software Defined Radio Applications," IEEE Circuits and Systems Magazine, Vol. 12, No. 1, pp. 12-32, March 2012.
- 7) H.S. Bhatt, S. Bharadwaj, **R. Singh, and M. Vatsa**, *Recognizing Surgically Altered Face Images using Multi-objective Evolutionary Algorithm*, IEEE Transactions on Information Forensics and Security, Vol.8, No.1, pp.89-100, **Jan. 2013**.
- 8) H.S. Bhatt, S. Bharadwaj, **R. Singh, and M. Vatsa**, *Memetically Optimized MCWLD for Matching Sketches with Digital Face Images*, IEEE Transactions on Information Forensics and Security, Vol. 7, No. 5, pp. 1522-1535, 2012.
- 9) H. S. Chen, **A. Majumdar** and P. Kozlowski, "Compressed Sensing CPMG with Group-Sparse Reconstruction for Myelin Water Imaging", Magnetic Resonance in Medicine (Accepted). (I.F. 3.0)
- 10) **A. Majumdar** and R. Ward, "Rank Awareness in Group-sparse Recovery of Multiecho MR Images", Sensors, Vol. 13(3), pp. 3902-3921, 2013. (I.F. 1.7)
- 11) **A. Majumdar**, "Improved Dynamic MRI Reconstruction by Exploiting Sparsity and Rank-Deficiency", Magnetic Resonance Imaging (Accepted). (I.F. 2.0)
- 12) **M. Vatsa**, Quality Induced Multiclassifier Fingerprint Verification using Extended Feature Set, Signal and Image Processing for Biometrics Under Uncontrolled data Acquisition Conditions (Book Editors: Jacob Sharcanski, Hugo Proença and Eliza Y. Du), Springer-Verlag, 2013. (Accepted)
- 13) H.S. Bhatt, S. Bharadwaj, **R. Singh, and M. Vatsa**, *Plastic Surgery and Face Recognition, Encyclopedia of Biometrics*, 2nd Edition, 2013. (Accepted)
- 14) Massimo Tistarelli, Daksha Yadav, **Mayank, Vatsa and Richa Singh**, *Short- and Long-Time Aging Effects in Face Recognition*, In Age Factors in Biometric Processing, Edited by Michael Fairhurst, IET Publisher, 2013. (Accepted)
- 15) Dac Tu Ho, E.I. Grøtli, **P.B. Sujit**, T.A. Johansen and J.B. Sousa, *Cluster based Communication Topology Selection and UAV Path Planning in Wireless Sensor Networks*, Journal of Intelligent Robotic Systems (Accepted)
- 16) Gupta, A., **Kumaraguru**, **P**, *Misinformation on Twitter during Crisis Events*, Encyclopedia of Social Network Analysis and Mining (ESNAM). Springer publications. 2012. **Book chapter**
- 17) A book chapter on "Max-Coloring" by **Rajiv Raman** along with Julian Mestre to appear in the Encyclopedia of Combinatorial Optimization.
- 18) W. Liu, S. Srivastava, L. Lu, M. O'Neill and E. Swartzlander, Jr., "Are QCA Cryptographic Circuits Resistant to Power Analysis Attacks?" Accepted in IEEE Transactions on Nanotechnology.

- 19) T. Rao and **S. Srivastava**, "Twitter Sentiment Analysis: How To Hedge Your Bets In The Stock Markets", (accepted) to appear in chapter in LNCS Journal on Social Media Analysis and Mining, 2013
- 20) **Srinivasan A.** Faruqui, T.A. and Joshi, S. (2012) *Data and Task Parallelism for ILP using MapReduce.Mach. Learn*, 86(1), pp. 141-168.
- 21) **Sriram K.**, Rodriguez-Fernandez M, Doyle FJ III (2012) *A Detailed Modular Analysis of Heat-Shock Protein Dynamics under Acute and Chronic Stress and Its Implication in Anxiety Disorders.* PLoS ONE 7(8): e42958. doi:10.1371/journal.pone.0042958.
- 22) **Sriram K**., Rodriguez-Fernandez M, Doyle FJ III (2012) *Modeling Cortisol Dynamics in the Neuro-endocrine Axis Distinguishes Normal, Depression, and Post-traumatic Stress Disorder (PTSD) in Humans*. PLoS Comput Biol 8(2): e1002379. doi:10.1371/journal.pcbi.1002379
- 23) **Sujay Deb**, Kevin Chang, Amlan Ganguly, Xinmin Yu, Partha Pande, Deuk Heo, Benjamin Belzer, "Design of an Energy Efficient CMOS Compatible NoC Architecture With mm-wave Wireless Interconnects", IEEE Transactions on Computers (TC), Digital Object Identifier: 10.1109/TC.2012.224 (Best ranked journal)
- 24) **Vikram Goyal**, Ankita Likhyani, Neha Bansal, Ling Liu, "Efficient Trajectory Cover Search for Moving Object Trajectories", IEEE Mobile Services (Accepted)

#### **Refereed Conferences**

- 1) Sahil Garg, **Amarjeet Singh**, Fabio Ramos, "*Learning Non Stationary Space Time Models for Environmental Monitoring*", 26th Conference on Artificial Intelligence (AAAI), Special Track on Computational Sustainability and AI, July 22 26, 2012, Toronto, Ontario, Canada
- 2) Siddhartha Ashthana, **Pushpendra Singh**, **Amarjeet Singh**, "Exploring Adverse Effects of Adaptive Voice Menu", to appear in proceedings of the 2013 ACM annual conference extended abstracts on Human Factors in Computing Systems (CHI) Extended Abstracts.
- 3) Siddhartha Ashthana, **Pushpendra Singh**, **Amarjeet Singh**, "Design and Evaluation of Adaptive Interfaces for IVR Systems", to appear in proceedings of the 2013 ACM annual conference extended abstracts on Human Factors in Computing Systems (CHI) Extended Abstracts.
- 4) Pandarasamy Arjunan, Manaswi Saha, Manoj Gulati, Nipun Batra, **Amarjeet Singh**, **Pushpendra Singh**, "SensorAct: Design and Implementation of Fine-grained Sensing and Control Sharing in Buildings", 10th USENIX Symposium on Networked Systems Design and Implementation (NSDI '13), 2013.
- 5) Pandarasamy Arjunan, Nipun Batra, Haksoo Choi, **Amarjeet Singh**, **Pushpendra Singh**, Mani Srivastava, *SensorAct*: "A Privacy and Security Aware Federated Middleware for Building Management", In Proceedings of the Fourth ACM Workshop on Embedded Sensing Systems for Energy-Efficiency in Buildings (BuildSys), USA, 2012.
- 6) Siddhartha Ashthana, **Pushpendra Singh, Amarjeet Singh**, "Accessing Designs of Interactive Voice Response Systems for Better Usability", to appear in proceedings of the 15th International Conference on Human-Computer Interaction (HCII), LNCS (Springer), USA, 2013.

- 7) Nipun Batra, Pandarasamy Arjunan, Amarjeet Singh, Pushpendra Singh, 'Low Cost, Large Scale, Occupancy Driven Building Management', IEEE Eighth International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), April 2013, Melbourne, Australia
- 8) Sahil Garg, **Amarjeet Singh,** Fabio Ramos, "Efficient Space-Time Modeling for Informative Sensing", in SensorKDD'12: The 6th International Workshop on Knowledge Discovery from Sensor Data, Co-located with KDD'12, August 12, 2012, Beijing, China
- 9) Jassal, P., Yadav, K., Kumar, A., Naik, V., Narwal, V., Singh, A., "Unity: Collaborative Downloading of Content Using co-located Socially Connected Peers", Ninth International Workshop on Mobile Peer-to-Peer Computing (MP2P), Co-located with PerCom, March, 2013, San Diego, USA
- 10) Siddhartha Ashthana, **Pushpendra Singh**, **Amarjeet Singh**, "Exploring the usability of Interactive Voice Response System's design", In Proceedings of the 3rd ACM Annual Symposium on Computing for Development (DEV), 2013.
- 11) Siddhartha Ashthana, **Pushpendra Singh**, **Amarjeet Singh**, "A Case for Adaptive Interface for Interactive Voice Response System", In Proceedings of the 3rd ACM Annual Symposium on Computing for Development (DEV), 2013.
- 12) Siddhartha Ashthana, **Pushpendra Singh**, **Amarjeet Singh**, "MockTell: Exploring challenges of user emulation in Interactive Voice Response Testing", to appear in *Proceedings of the 4th ACM/SPEC International Conference on Performance Engineering (ICPE)*, 2013.
- 13) Yadav, K., Kumar, A., **Naik, V**., **Singh, A.**, "A tale of people's movement patterns in developing countries", Poster at Third International Conference on the Analysis of Mobile Phone Datasets (NetMob), May 1-3, 2013, Cambridge, MA, USA
- 14) **A. Majumdar** and R. Ward, "Exploiting Sparsity and Rank-deficiency in Dynamic MRI Reconstruction", IEEE International Conference on Acoustics Speech and Signal Processing, May, 25-30, Vancouver Canada. (Flagship Conference of IEEE Signal Processing Society
- 15) **A. Majumdar** and R. Ward, "Exploiting Rank Deficiency for MR Image Reconstruction from Multiple Partial K-Space Scans", IEEE Canadian Conference on Electrical and Computer Engineering, May, 5-8, Regina, Canada. (Premier conference of IEEE Canada).
- **A Majumdar** and R. Ward, "Non-linear Sparse and Group-sparse Classifier", IEEE Canadian Conference on Electrical and Computer Engineering, May, 5-8, Regina, Canada. (Premier conference of IEEE Canada).
- 17) **Ashish Sureka**. 2012. *Learning to classify bug reports into components*. In Proceedings of the 50th international conference on Objects, Models, Components, Patterns (TOOLS'12), Carlo A.Furia and Sebastian Nanz (Eds.). Springer-Verlag, Berlin, Heidelberg, 288-303. (May 28-June 1, 2012)
- 18) Correa, Denzil.; **Sureka, Ashish**.; Sethi, Raghav., *WhACKY! What anyone could know about you from Twitter*; Privacy, Security and Trust (PST), 2012 Tenth Annual International Conference, vol., no., pp.43,50, 16-18 July 2012)

- 19) **Ashish Sureka**. 2012. *Source code identifier splitting using Yahoo image and web search engine*. In Proceedings of the First International Workshop on Software Mining (Software Mining '12). ACM, New York, NY, USA, 1-8. (August 12, 2012)
- 20) Denzil Correa, **Ashish Sureka**, and Mayank Pundir. 2012. *iTop: interaction based topic centric community discovery on twitter*. In Proceedings of the 5th Ph.D. workshop on Information and knowledge (PIKM '12). ACM, New York, 51-58. (October 29, 2012)
- 21) Lal, Sangeeta.; **Sureka**, **Ashish**., *Comparison of Seven Bug Report Types: A Case-Study of Google Chrome Browser Project*, Software Engineering Conference (APSEC), 2012 19th Asia-Pacific, vol.1, pp.517,526, 4-7 Dec. 2012
- 22) Ayushi Rastogi, Arpit Gupta, and **Ashish Sureka**. 2013. *Samiksha: mining issue tracking system for contribution and performance assessment*. In Proceedings of the 6th India Software Engineering Conference (ISEC '13). ACM, New York, NY, USA, 13-22. (Feb 21-23, 2013)
- 23) Denzil Correa and **Ashish Sureka**. 2013. *Integrating Issue Tracking Systems with Community-Based Question and Answering Websites*. To be Published In Proceedings of the 22<sup>nd</sup> Australian Software Engineering Conference (ASWEC 2013)
- 24) Vidushi Chaudhary and **Ashish Sureka**. 2013. *Contextual Feature Based One-Class Classifier Approach for Detecting Video Response Spam on YouTube*. To be Published In Proceedings of the PST2013 Eleventh Annual International Conference on Privacy, Security and Trust (PST)
- 25) **Donghoon Chang**, "Sufficient Conditions on Padding Schemes of Sponge Construction and Sponge-Based Authenticated-Encryption Scheme". INDOCRYPT 2012. Volume 7668/2012.
- 26) Gaurav Gupta, Ankit Sarkar, Robin Verma, "Detecting Counterfeit Currency and Identifying its Source", Ninth Annual IFIP WG 11.9 International Conference on Digital Forensics, National Center for Forensic Science, Orlando, Florida, USA, January 28 30, 2013
- 27) **Gupta Gaurav**, Verma, Robin "Forensically Important Artifacts Resulting from Usage of Cloud Client Services" in Case Study Track of ACM ACSAC 2012, Florida.
- 28) H. Mehrotra, **M. Vatsa, R. Singh,** and B. Majhi, *Biometric match score fusion using RVM: A case study in multi-unit iris recognition*, In IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2012, pp. 65-70.
- 29) N. Kohli, **R. Singh, and M. Vatsa**, *Self-Similarity Representation of Weber Faces for Kinship Classification*, In Proceedings of International Conference on Biometrics: Theory, Applications and Systems, 2012.
- 30) G. Goswami, **R. Singh, M. Vatsa**, B. Powell and A. Noore, *Face Recognition CAPTCHA*, In Proceedings of International Conference on Biometrics: Theory, Applications and Systems, 2012.
- 31) S. S. Arora, **M. Vatsa, R. Singh**, and A. K. Jain, *On Iris Camera Interoperability*, In Proceedings of International Conference on Biometrics: Theory, Applications and Systems, 2012, **Received the Best Poster Award.**

- 32) G. Goswami, B.M. Powell, **M. Vatsa, R. Singh**, and A. Noore, *FaceDCAPTCHA: Face Detection based Color Image CAPTCHA*, Future Generation Computer Systems Special Issue on Human-Involved Computational Systems, Elsevier, 2012. (Accepted)
- 33) T. I. Dhamecha, A. Nigam, **R. Singh, and M. Vatsa,** *Disguise Detection and Face Recognition in Visible and Thermal Spectrums*, 6th IAPR International Conference on Biometrics, June, 2013. (Accepted)
- D. Yadav, N. Kohli, **R. Singh, and M. Vatsa**, *Revisiting Iris Recognition with Color Cosmetic Contact Lenses*, 6th IAPR International Conference on Biometrics, June, 2013. (Accepted)
- 35) D. Yadav, **R. Singh, M. Vatsa**, M. Tistarelli, *Bacteria Foraging Fusion For Face Recognition Across Age Progression*, CVPR Workshop On Biometrics, 2013. (Accepted)
- 36) S. Bharadwaj, T. I. Dhamecha, **M. Vatsa, R. Singh**, *Computationally Efficient Face Spoofing Detection with Motion Magnification*, CVPR Workshop On Biometrics, 2013. (Accepted)
- 37) H.S. Bhatt, **R. Singh, M. Vatsa,** Can Combining Demographics and Biometrics Improve Deduplication Performance? CVPR Workshop On Biometrics, 2013. (Accepted)
- 38) M. S. Hashmi, P. J. Tasker, and F. M. Ghannouchi, "High Speed Device Characterization Enabler: The Envelope Load-Pull," IEEE Asia Pacific Microwave Conference, pp. 1-4, Kaohsiung, Taiwan, Dec. 2012.
- 39) K. Rawat, M. S. Hashmi, F. Falcone, and F. M. Ghannouchi, "Dual-band Phase Offset Line with Required Transmission Phases at Two Operational Frequencies," IEEE MTT-S International Microwave Symposium, Montreal, Canada, June 2012.
- 40) J.A. Fortuna, **P.B. Sujit** and J.B. Sousa: *Multiple UAV Area Decomposition and Coverage*, IEEE Symposium on Computational Intelligence, Singapore, April 2013. (Accepted)
- 41) D.E. Lucani, **P.B. Sujit** and J.B. Sousa: *Spare the Mule, Help your Neighbors: Robot Route Planning for Data Retrieval on Large Scale Sensor Networks*, IEEE International Conference on Robotics and Automation, Karlsruhe, Germany, May 2013. (Accepted)
- 42) Ottoni, R., Pesce, J., Casas, D., Franciscani, G., Meira, W., **Kumaraguru, P.,** Almeida, V. *Ladies First: Analyzing Gender Roles and Behaviors in Pinterest*. Accepted at The International AAAI Conference on Weblogs and Social Media (ICWSM) 2013.
- 43) Aggarawal, A., Rajadesingan, A., and **Kumaraguru**, **P**. *PhishAri: Automatic Realtime Phishing Detection on Twitter*. In Anti-Phishing Working Group e-Crime Researchers Summit (2012). **Best Paper Award.**
- 44) Magalhães, T., Dewan, P., **Kumaraguru**, **P**., Melo-Minardi, R., Almeida, V. *uTrack: Track Yourself! Monitoring Information on Online Social Media*. Accepted at the 22nd International World Wide Web Conference (WWW) (2013)
- 45) Yadav, K., Saha, S., **Kumaraguru, P.,** Kumra, R. *Take Control of Your SMSes: Designing a Usable Spam SMS Filtering System*. Accepted at the 13th International Conference on Mobile Data Management (MDM) (2012).

- 46) Gupta, A., Lamba, H., **Kumaraguru, P.,** Joshi, A. *Faking Sandy: Characterizing and Identifying Fake Images on Twitter during Hurricane Sandy*. Accepted at the 2nd International Workshop on Privacy and Security in Online Social Media (PSOSM), in conjunction with the 22th International World Wide Web Conference (WWW) (2013).
- 47) Jain, **P., Kumaraguru**, P., Joshi, A. @*I seek 'fb.me': Identifying Users across Multiple Online Social Networks*. Accepted at the 2nd International Workshop on Web of Linked Entities (WoLE), in conjunction with the 22th International World Wide Web Conference (WWW) (2013).
- 48) Lerman, K., Jain, P., Ghosh, R., Kang, J., and **Kumaraguru**, **P.** *Limited Attention and Centrality in Social Networks*. In Proceedings of International Conference on Social Intelligence and Technology (SOCIETY). 2013.
- 49) Aggarwal, A., Almeida, J., **Kumaraguru, P**. *Detection of Spam Tipping Behaviour on Foursquare*. Accepted at the 2nd International Workshop on Mining Social Network Dynamics (MSND), in conjunction with the 22th International World Wide Web Conference (WWW) (2013).
- 50) Pontes, T., Magno, G., Vasconcelos, M., Gupta, A., Almeida, J., **Kumaraguru, P.**, and Almeida, V. *Beware of What You Share: Inferring Home Location in Social Networks*. In Privacy in Social Data (PinSoda), in conjunction with International Conference on Data Mining (ICDM) (2012).
- 51) Gupta, A., Joshi, A., and **Kumaraguru**, **P**. *Identifying and Characterizing User Communities on Twitter during Crisis Events*. Workshop on Data-driven User Behavioral Modelling and Mining from Social Media, Co-located with CIKM (2012).
- 52) Pontes, T., Vasconcelos, M., Almeida, J., **Kumaraguru**, **P**., and Almeida, V. *We Know Where You Live: Privacy Characterization of Foursquare Behavior*. In 4th International Workshop on Location-Based Social Networks (LBSN 2012).
- 53) Malhotra, A., Totti, L., Meira, W., **Kumaraguru, P.**, and Almeida, V. *Studying user footprints in different online social networks*. Accepted at International Workshop on Cybersecurity of Online Social Network (CSOSN) (2012).
- 54) Panjwani, S., Ghosh, M., Singh, S., **Kumaraguru, P.** *The Paper Slip Should be There: Perceptions of Transaction Receipts in Branchless Banking*. Accepted at Mobile HCI 2013.
- 55) T. Rao and **S. Srivastava**, "*TweetSmart: Hedging In Markets Through Twitter*", in Third International Conference on IEEE Emerging Applications of Information Technology (*EAIT 2012*), 30 Nov 1 Dec, 2012
- 56) J. Kumar, T. Rao and **S. Srivastava**, "Economics of Gold Price Movement-Forecasting Analysis Using Macro-Economic, Investor Fear and Investor Behavior Features", in International Conference on Big Data Analytics (BDA 2012), New Delhi, 24-26 Dec, 2012.
- 57) W. Liu, S. Srivastava, L. Lu, M. O'Neill and E. Swartzlander, Jr." *Power Analysis Attack of QCA Circuits: a Case Study of the Serpent Cipher*", accepted at the 2013 IEEE International Symposium on Circuits and Systems, Beijing, 19-23 May, 2013
- 58) T. Rao and **S. Srivastava**, "Modeling Movements in Oil, Gold, Forex and Market Indices using Search Volume Index and Twitter Sentiments", accepted in ACM Web Science Conference (WebSci 2013), Paris, 2-4 May, 2013

- 59) M. Gupta, S. Saha, V. Goyal, S. Kaul, K. Sriram, G. Gupta, and S. Bali, "Smartphone-Based Anomalous Human Activity Detection and Prediction," Hotmobile Poster, 2013
- 60) A. Gupta, T. Verma, S. Bali, and **S. Kaul**, "Detecting MS initiated signaling DDoS attacks in 3G/4G wireless networks," in Communication Systems and Networks (COMSNETS), 2013 Fifth International Conference on, 2013, pp. 1–6.
- Klaus Berberich and **Srikanta Bedathur**, "Computing n-gram Statistics in Map Reduce",16<sup>th</sup> International Conference on Extending Database Technology (EDBT), Genoa, Italy, 2013.
- 62) Stephan Seufert, Avishek Anand, **Srikanta Bedathur** and Gerhard Weikum, "Ferrari Flexible and Efficient Reachability Range Assignment for Graph Indexing", 29<sup>th</sup> IEEE International Conference on Data Engineering (ICDE), Brisbane, Australia, 2013.
- 63) **Srikanta Bedathur**, Klaus Berberich, John Patlakas, Peter Triantifillou and Gerhard Weikum, "D-Hive: Data Bees Pollinating RDF, Text, and Time", 6th Biennial Conference on Innovative Data Systems Research (CIDR), Asilomar, USA, 2013. (Outrageous Ideas and Vision Track)
- 64) Andrey Gubichev, **Srikanta Bedathur** and Stephan Seufert, "Sparqling Kleene: Fast Regex Paths in RDF 3x", accepted at Workshop on Graph Data-management Experiences and Systems (GRADES), collocated with SIGMOD 2013.
- 65) Saha, A. and **Srinivasan, A**. and Ramakrishnan, G. (2012) *What kinds of Features are Useful for Statistical Learning?* Proc. 22nd International Conference on Inductive Logic Programming. To appear in F. Raguzzi and F. Zelezny, eds., LNAI-7842
- 66) Faruquie, T.A., **Srinivasan**, **A.** and King, R.D. (2012) *Topic Models with Relational Features for Drug Design*. Proc. 22nd International Conference on Inductive Logic Programming. To appear in F. Raguzzi and F. Zelezny, eds., LNAI-7842
- 67) Maria Rodriguez-Fernandez, **K Sriram** & Francis J. Doyle (2013) *Distinguishing normal, depressive and PTSD cortisol dynamics in humans through mathematical modelling Endocrine Abstracts* (2013) 31 APW1.2 | DOI:10.1530/endoabs.31.APW1.2, Harrogate, UK, 18 March 2013 21 March 2013
- 68) Kalapriya Kannan and **Subhasis Banerjee** "Compact TCAM: Flow Entry Compaction in TCAM for Power Aware SDN", 14th International Conference on Distributed Computing and Networking, Mumbai, INDIA (ICDCN 2013).
- 69) Kalapriya Kannan and **Subhasis Banerjee** "Scissors: Dealing with Header Redundancies in Data Centers through SDN", 8th International Conference on Network and Service Management (CNSM 2012)
- 70) **A V Subramanyam**, "Pixel Estimation Based Video Forgery Detection", accepted at IEEE International Conference on Acoustics, Speech and Signal Processing.
- 71) Suman Deb, **Sujay Deb**, "Designing an intelligent blink analyzer tool for effective human computer interaction through eye," in proceedings of International Conference on Intelligent Human Computer Interaction (IHCI), Dec. 2012, pp. 1-5

- 72) Supratim Das, Srikrishna, Ankita Shukla, GNS Harsha, **Sujay Deb**, "*A low-cost non-intrusive appliance load monitoring system*", in proceedings of IEEE International Advance Computing Conference (IACC), Feb. 2013, pp. 1641-1644.
- 73) Paul Wettin, Partha Pande, Deukhyoun Heo, Benjamin Belzer, Amlan Ganguly and **Sujay Deb**, "Design Space Exploration for Reliable mm-Wave Wireless NoC Architectures," accepted in IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP), June 5-7 2013.
- 74) K. Yadav, D. Chakraborty, S. Soubam, N. Prathapaneni, V. Nandakumar, V. Naik, N. Rajamani, L. V. Subramaniam, S. Mehta, and P. De. *Human Sensors: Case-study of Open ended Community Sensing in Developing Regions*. Accepted at the The IEEE Pervasive Computing and Communication (PerCom) Conference Work in Progress, March 18-22, 2013, San Diego, USA
- 75) P Jassal, K. Yadav, A. Kumar, V. Narwal, V. Naik, and A. Singh. *Unity: Collaborative Downloading Content using co-located Socially Connected Peers*. Accepted at The 9<sup>th</sup> International Workshop on Mobile Peer to Peer Computing (MP2P'13, March 18 22, 2013, San Diego, USA
- 76) S. Soubam, N. Prathapaneni, V. Nandakumar, K. Yadav, V. Naik, N. Rajamani, D. Chakraborty, L. V. Subramaniam, S. Mehta, and P. De. *Open EndedCommunity-Sensing: Data Collection and Processing*. Accepted at the Sixth Workshop on Analytics for Noisy Unstructured Text Data (AND'12), IIT Bombay
- 77) K. Yadav, V. Naik, and A. Singh. *Building Energy-Efficient Spatio Temporal Mobility Profiles for Mobile Users*. Accepted in Third International Conference on the Analysis of Mobile Phone Datasets (D4D Challenge), May 1-3, 2013, MIT, Boston, USA
- 78) K. Yadav, A. Kumar, V. Naik, and A. Singh. *A Tale of Peoples' Movement Patterns in Developing Countries*. Accepted in Data for Development (D4D) Challenge at Third International Conference on the Analysis of Mobile Phone Datasets (NetMob'13), May 1-3, 2013, MIT, Boston, USA

### 4 Outreach and Professional Service

IIIT-D organized number of national and international conferences, conducted short courses and workshops in the past academic year which are highlighted below.

## 4.1 Conferences/Short Courses/Workshops Organized

- 1) NORAD Seed Funding 2012: Mobile & Ubiquitous Computing Group Workshop; PI: Dr Amarjeet Singh; Duration: January 25-26; Funding Agency: NORAD-Norway; Amount sanctioned: Rs 2,345,772.59
- **2) Targeted Training Programme:** Advance techniques in Cryptanalysis of Symmetric Systems; PI: Dr Somitra Kumar Sanadhya; Duration: February 28-March 7, 2013; Funding Agency: DRDO; Amount sanctioned: Rs 2,381,500.00
- **3) Research Showcase:** IIIT Delhi's third annual Research Showcase took place on 15th-16th March, 2013. Atotal of 39 posters and demos were presented, which included recent innovations by various research groups at the institute such as Emerging Architecture and System Design, Cryptography and Forensics, Information Management and Data Analytics, Mobile and Ubiquitous Computing, Security and Privacy, Software

Engineering and Theory, as well as outstanding course projects developed by students. Out of these, 6 posters and demos were by undergraduates. The event was sponsored by Microsoft India with a funding of Rs 50,000

**4) Indo-UK Cyber Security Workshop**; PI: Dr Ponnurangam Kumaraguru; Duration: March 24-26, 2013; Funding Agency: DST-Indo/UK; Amount sanctioned: Rs 650,000.00

Research Councils UK (RCUK) and India's Department of Science and Technology brought together top researchers from India and the UK for this workshop to discuss cyber security, a pressing transnational issue demanding global cooperation

### 4.2 Participation of Faculty in National & International Conferences

Our faculty members also attended a number of national and international conferences and presented their research results, enhancing their professional expertise.

### **Amarjeet Singh**

• Convener of Professor Summit on Atmel XMEGA and ARM-based SAM4L microcontrollers, held at the IIIT-D on July 18-19

### Somitra Kr Sanadhya

- Co-PC Chair, 2<sup>nd</sup> international conference on "Security, Privacy and Applied Cryptography Engineering" SPACE 2012, held in association with IIT Chennai. Publication in LNCS. The Program committee included top names in international crypto research.
- Organized a workshop on "Symmetric ciphers cryptanalysis" by Vincent Rijmen and Andrey Bogdanov at IIIT Delhi. This was supported by DRDO, and the amount sanctioned was about Rs 24 lakhs.

## Mayank Vatsa

- Session Chair, IEEE International Conference on BTAS, Washington DC, USA September 2012
- Session Chair, International Conference on CVPR, Workshop on Biometrics, Providence, USA June 2012
- Visiting Researcher, hosted by PRIP lab (Prof. Anil Jain) Michigan State University, USA (One month in June-July 2012)
- Visiting Researcher, hosted by Prof. Afzel Noore, West Virginia University, USA (One week in June 2012)

## Ponnurangam Kumaraguru

- Co-Organizer for Indo-UK workshop on Cyber-security. Attended by a 14-member delegation from the UK and 15-member team from India. This was funded by Department of Science and Technology, India. (24<sup>th</sup> March, 2013 27<sup>th</sup> March, 2013)
- Co-Organizer for the Workshop on Consumer Privacy Around the Globe at the Global Privacy Summit from March 6–8, 2013. This was attended by about 30 privacy professionals around the globe in Washington DC, USA.
- Co-Organizer for Security and Privacy Symposium attended by 100 participants, including 60 faculty / researchers, and 40 students from all around India (February 28– March 2, 2013)

 Second International Workshop on Privacy and Security in Online Social Media at Rio De Janeiro, Brazil on May 14, 2013

### Richa Singh

- Sponsorship Chair, International Conference on Biometrics, Madrid, Spain, June 2013
- Session Chair, IEEE International Conference on BTAS, Washington DC, USA September 2012
- Visiting Researcher, hosted by Prof. Anil Jain, Michigan State University, USA (One month in June-July 2012)
- Visiting Researcher, hosted by Prof. Afzel Noore, West Virginia University, USA (One week in June 2012)

### Vinayak Nayak

Invited to chair Networking Track session at ICDCN'13, Jan 2013, Mumbai, India

### 4.3 Other Visits by Faculty

### **Amarjeet Singh**

- Invited speaker, IGIT (July 2, 2012): Application oriented research in mobile computing group at IIIT Delhi
- Invited for Guest Lecture in the UMass-IITB Course on Smart Grids
- Invited to be part of Governing Council, HISP India
- Invited Speaker, IBM 2012 Regional Technical Exchange (Sep 11-12): Gave a talk on sensing infrastructure for energy and water sustainability at IIIT Delhi
- Invited Speaker, Workshop on home monitoring of chronic diseases using mobile technology (Sep 21, 2012)
- Invited speaker, DataDev Workshop, co-located with MDM 2012

### Gaurav Gupta

- Delivered invited lecture on topic "Current And Future Trends In Digital Forensic" at Haryana Police academy, Madhuban, Karnal, Haryana
- Delivered invited lecture on topic "Myth versus reality of computer frauds and cyber crime" at Amity University
- Delivered invited lecture on topic "Current And Future Trends In Digital Forensic" at AIT conducted Faculty Development program.

## Mayank Vatsa

- Online Learning in Biometrics, Opera Solutions, Noida, November, 2012
- Challenges in Iris Recognition, NEC Research Labs, Bangalore, September, 2012

## Pushpendra Singh

- Invited talk at NetHealth 2013, Bengaluru, India, January 2013
- Invited talk at Peer Mentoring Workshop, Georgia, Atlanta, USA, March 2012

### Srikanta Bedathur Jagganath

- Guest lecture module on Graph Databases in the course "Web Intelligence and Big Data" on Coursera
- Invited talk at Xerox Research Center India (XRCI), Bangalore on "Scalable Graph Management for Linked Data"
- Invited talk at IMPECS workshop on Social Data Analytics at IIT-Kharagpur on "Scalable Network Processing in Social Networks"
- Invited talk at Inaugural workshop of IKDD on Understanding Big Data Analytics held in Mysore Infosys Park

### Subhasis Banerjee

- DRDO workshop lecture/tutorial (30-Aug-2012): Memory Management in Multicore Systems
- Invited lecture at CSE department, Amity University (6-Feb-2013): Moving into multicore era: opportunities and challenges
- Tutorial at Workshop on Embedded System Design, School of Information Technology, University of Calcutta (10-Mar-2013): Design Challenges in Multiprocessor SoC.

### Vinayak Nayak

- Invited to chair Networking Track session at ICDCN'13, Jan 2013, Mumbai, India
- Making Healthcare Delivery System Distributed and Delay Tolerant, Invited talk at NetHealth Workshop at ComsNet in Bangalore, India on January 7, 2013

### 4.4 Distinguished Visitors and Invited Seminars

The aim of inviting distinguished visitors to IIIT-D is to provide opportunity to the faculty to strengthen the collaborative research and enhance their visibility both in academia and industry. Many distinguished visitors from academia and industries visited IIIT-D that served as a venue for exchanging research ideas. Some of these visits are mentioned below.

Speaker	Title	Date
Dr Kavitha Telikepalli, TIFR, Mumbai	Small stretch Pair wise spanners	April 11,2013
Dr Magda El Zarki, University of California, Irvine	Online Game Systems - A Networking Perspective	April 2,2013
Prof Alan Murray, Edinburgh University	Designing Sustainability	March 19 ,2013
Mr Rohit Ranja	YES!+ workshop, we thought of introducing with an introductory seminar	March 18, 2013
Dr Tony ThomasAssistant ProfessorIndian Institute of Information Technology and Management – Kerala	Cryptographic Primitives, their Security and Trends	March 14,2013

Speaker	Title	Date
Prof Anil K Jain, University Distinguished Professor in theDepartment of Computer Science at Michigan State University, USA	Biometrics: Technology for Human Recognition	Feb 25, 2013
Dr Vinay Ribeiro, CSE IIT Delhi	Rapidly deployable TDMA mesh network with application todisaster management	Feb 21, 2013
Prof Robert Tijdeman, Mathematical Institute, Leiden University, The Netherlands	Discrete Tomography	Feb 7, 2013
Dr Gautam Shroff, Vice President and Chief Scientist, TCS Innovation Labs	Enterprise BigData Applications and Research Problems	Jan 31, 2013
Dr Krishna Gummadi, Max Planck Institute for Software Systems, Germany	Extracting Relevant and Trustworthy Information from Microblogs	Dec 12, 2012
Prof Ashwin Srinivasan, IIIT Delhi	Computers are People Too!	Nov 8, 2012
Dr. Kaushik Saha, ST Microelectronics	Digital Coding and Compression of High Fidelity Audio	Nov 1, 2012
Prof Harish Parthasarathy, ECE division, NSIT	Estimating the transformation connecting blurred image pairs	Oct 25, 2012
Dr Raj Minhas, Xerox Research Assets	Xerox Research: Turning Inspirations into Crit Oct 18, 2012	ical Customer
Raman Grover, Univ. of California, Irvine	ASTERIX: Scalable Warehouse-Style Web Data Integration	Oct 16, 2012
Dr Rajiv Raman, TRDDC, Pune	Maximum feasible subsystems and applications	Oct 11, 2012
Prof Narayan B Mandayam, Rutgers University	Network Coding as a Dynamical System	Sep 27, 2012
Prof Manindra Agrawal, IIT Kanpur	Polynomials from a Computational Perspective	Sep 20, 2012
Dr Rahul Garg, Opera Solutions	Anonymization of High Dimensional Data Using Nearest Neighbor Clustering and Perturbation	Sep 06, 2012
Dr L. Venkata Subramaniam, IBM IRL	Inferring from the Crowd	Aug 30, 2012

## 4.5 Professional Service

IIIT-D faculty served in various research and conference committees as well as editorial boards as outlined below:

## **Amarjeet Singh**

- PC Member: ICDCN 2013, Dev 2013, Buildsys 2012, ICRA 2013, ACM e-Energy 2013, IEEE SenseApp 2013
- Publicity Chair: Comsnets 2013

Reviewer: IEEE Transaction on Robotics, NCC 2013, Journal of Field and Service Robotics

### Angshul Majumdar

- External reviewer for IEEE ICASSP, IEEE ICIP and MICCAI
- Reviewer for IEEE Transactions on Signal Processing, IEEE Transactions on 'Image Processing,
  IEEE Signal Processing Letters, Elsevier Signal Processing, Elsevier Magnetic Resonance Imaging,
  Magnetic Resonance in Medicine, Neorocomputing
- Instructed a full-day workshop on Compressed Sensing Theory at IIT Guwahati.

#### Ashish Sureka

- Finance Chair for ISEC 2013 Conference
- Program Committee Member for Conferences: ISEC 2013, APSEC 2012 and 2013, BDA 2012 and 2013, ISSRE 2012, SEIP 2014 IJCAI 2013 Reviewer

#### **Astrid Kiehn**

- PC member of PNSE 2013 (International Workshop on Petri nets and Software Engineering)
- Member of the advising student research committee of Shibashis Guha, PhD student at CSE, IIT Delhi.

### Debajyoti Bera

 Was consulted for drafting the syllabus for a course on Design and Analysis of Algorithms for PhD program of IGNOU

### **Donghoon Chang**

• SPACE 2012 (Security, Privacy, and Applied Cryptography Engineering): Program Committee member

### **Government advisory roles:**

 Writing a report on SHA-3 project of NIST to KISA (Korea Internet & Security Agency) of Korea

### HB Acharya

- Reviewed three papers for Communications and Computer Security, journal, ACTA Press.
- Reviewed a paper for Distributed Computing, journal, Springer

### Mayank Vatsa

- Area Editor, IEEE Biometrics Compendium, January 2012 Present
- Reviewer of several IEEE, Elsevier and other journals and conferences
- Program Committee Member, IEEE International Conference on Image Processing, Orlando, October 2012
- Program Committee Member, International Conference on Biometrics: Theory, Applications and Systems, Washington DC, September 23-27, 2012
- Program Committee Member, Workshop on Biometrics, International Conference on Computer Vision and Pattern Recognition, Rhode Island, June 2012

- Program Committee Co-Chair, International Conference on Biometrics, Madrid, Spain, June 2013
- Program Committee Member, IEEE International Conference on Face and Gesture Recognition, Shanghai, April 2013
- Program Committee Member, International Workshop on Biometrics: Technologies, Systems and Applications, Barcelona, February 2013

### **Government advisory roles:**

- Member, Biometrics Committee on Immigration, Visa and Foreigner's Registration and Tracking, Ministry of Home Affairs and National Information Center
- Member, UID Standards Sub-Committee for Fingerprint Recognition
- Member, UID Standards Sub-Committee for Face Recognition
- Member, UID Standards Sub-Committee for Iris Recognition

#### Mohammad Hashmi

- 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*
- 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

### Ponnurangam Kumaraguru

- Part of the Technical Advisory Committee for the ACM Conference on Online Social Networks
  (COSN), cosn.acm.org. Six of the best workshops on Online Social Media (one of it being Privacy
  and Security in Online Social Media, which he co-organized at WWW 2013 and 2012) were
  merged to create this conference. He is also the publicity chair for the conference.
- Co-organizer for the Workshop on Privacy and Security in Online Social Media, Co-located with WWW 2013.
- Program Committee member for the 22nd International World Wide Web Conference, WWW 2013, for the track Security, Privacy, Trust, and Abuse Area.
- Program Committee member for 8th ACM Symposium on Information, Computer and Communications Security (ASIACCS), 2013.
- Program Committee member for Sixth Workshop on Analytics for Noisy Unstructured Text Data (AND) collocated with COLING 2013.

## Pushpendra Singh

- PC Member of ICDIT 2012
- PC Member of IBM Research Showcase

Government advisory role: Reviewed 2 DIT projects related to distributed systems and Middleware

## Rajiv Raman

Co-Designed the algorithms course for the PhD course at IGNOU

### Richa Singh

- Publications Chair, International Conference on Biometrics: Theory, Applications and Systems, Washington DC, September, 2013
- Editorial Board Member, Journal of Information Fusion, Elsevier
- Program Committee Member, IEEE International Conference on Face and Gesture Recognition, Shanghai, April 2013
- Program Committee Member, International Workshop on Biometrics: Technologies, Systems and Applications, Barcelona, February 2013.
- Program Committee Member, IEEE International Conference on Image Processing, Orlando, October 2012
- Program Committee Member, International Conference on Biometrics: Theory, Applications and Systems, Washington DC, September 2012
- Program Committee Member, Workshop on Biometrics, International Conference on Computer Vision and Pattern Recognition, Rhode Island, June 2012
- Reviewer of several IEEE, Elsevier and other journals and conferences

### **Government advisory roles:**

- Member, Biometrics Committee on Immigration, Visa and Foreigner's Registration and Tracking, Ministry of Home Affairs and National Information Center
- Member, UID Standards Sub-Committee for Face Recognition

#### Saket Srivastava:

- TPC member: FIE 2013, ISED 2013,
- Reviewer for DAC 2012, TVLSI, TNANO, ACM-JETC, IET-CDT

### Sanjit Krishnan Kaul

- Reviewer for transactions of mobile computing, ISIT, and etc.
- I-CARE 2012 Next-Gen Track co-chair

### Srikanta Bedathur Jagganna

- Program Committee member of AND 2012 workshop collocated with COLING 2012, Mumbai;
   First International Conference on Big Data Analytics (BDA), 2012; PVLDB 2014 (Volume7);
   ACM CIKM 2013; EDBT 2014; DBRank 2013
- Reviewer for VLDB Journal, IEEE Trans. On Knowledge and Data Engineering
- Co chair of Information Management Track of IBM I CARE 2013
- Work in Progress track chair of COMAD 2013

### Ashwin Srinivasan

- Miscelleaneous PC memberships, including ILP 2013, ECML 2013
- Special Committee member for the School of Integrative Sciences, JNU
- Board of Studies member of the South Asian University.

#### K Sriram

 PC member of the conference BIOPPN 2013 (4th International Workshop on Biological Processes & Petri Nets (BioPPN 2013)) in Italy in June 2013.

### Subhasis Banerjee

- TPC member: "Workshop on Performance Engineering and Applications (WPEA)" at HiPC 2012
- International PC member: ICIEV 2013, Bangladesh (2<sup>nd</sup> International conference, IEEE affiliated many well-known academician from India and abroad are part of PC)
- Reviewer of International Journal of Parallel Programming (IJPP, Springer) and Elsevier Journal of Systems Architecture (JSA).
- Elevated to Senior Member, IEEE

## Vikram Goyal

• Reviewer: Transaction of Knowledge and Data Engineering (TKDE)

• Program Committee: NCC 2013, BDA 2012

Publicity Chair: BDA 2012

Organizing Committee Member: BDA 2012

### Vinayak Nayak

- A reviewer for IEEE Transactions on Information Technology in BioMedicine (TITB'13)
- A program committee member of 2013 IEEE International Conference on Electronics, Computing and Communication Technologies (IEEE CONECCT), Bangalore, India during 17 19 Jan 2013

**Government advisory roles**: A member of Expert Committee meeting to finalize the syllabus on Operating System for PhD program in Computer Science, IGNOU, in the meeting held on 20<sup>th</sup> March, 2013, New Delhi

#### 5 Placement and Internships

IIIT Delhi pulled out all stops to launch a vigorous drive to invite various public and private sector organizations, and R&D labs for campus interviews that resulted in the placement of 81.63% B.Tech. students and 35.71% M.Tech. students in the last academic year. The break-up of the placement statistics is provided below.

#### 5.1 Placements

### **B.Tech. 2013 Graduating Batch Placement Statistics**

Number of B. Tech. students graduating in Year 2013: 56

Number of students registered with T&P (Training and Placement) Cell: 49

Number of students opted-out of placements (internship, dual-degree, higher-study): 7

Number of students secured a job [Percentage Placed]: 40 (40/49=81.63%)

Number of students unplaced = 9 (9/49=18.37%)

Number of overseas offers: 4
Number of India offers: 36

Higher salary (overseas) (4 job offers): 31.17 Lakhs Per Annum (5 Million JPY)

Highest salary (India) (4 job offers): 16 LPA (Lakhs Per Annum INR)

Average salary (excluding overseas and India job offers only, average of 31 offers): **8.03 LPA** Minimum Salary (2 offers): **3 LPA** 

Number of job offers equal to or above 10 LPA (out of 36 Indian Offers): 11

Number of job offers equal to or above 6 LPA (out of 36 Indian Offers): 22

Number of companies visited campus (or conducted campus recruitment drive): 26

### M.Tech. (2013 Graduating Batch) Placement Statistics

Number of M. Tech. students graduating in May 2013: 33

Number of students registered with T&P (Training and Placement) Cell: 28

Number of students opted out of placements due to confirmed plans of PhD: 5(5/33 = 15.15%)

Number of students secured a job through T&P Cell [Percentage Placed]: 10 (10/28 = 35.71%)

Number of students unplaced = 18 (18/28 = 64.28%)

Number of overseas offers: **0** Number of India offers: **10** 

Highest salary (overseas): N/A

Highest salary (India) (1 job offer): 7.0 LPA (Lakhs Per Annum INR)

Average salary (excluding overseas and India job offers only, average of 10 offers): 5.72 LPA

Minimum Salary (1 offer): 3.0 LPA

Number of job offers equal to or above 10 LPA (out of 10 Indian Offers): 0

Number of job offers equal to or above 6 LPA (out of 10 Indian Offers): 7

Number of companies visited campus (including one company that not announced results): 24

### **List of Selected Companies Visiting IIIT-D for Campus Recruitment:**

- Accenture
- Accolite
- ADOBE
- AirTight
- Amazon
- CDAC
- Digital Green
- EMC
- Facebook
- Futures First
- Google
- IBM
- Informatica
- Infosys
- KPMG
- Kritical Secure Scan
- Magic Software
- Microsoft
- NISM

- PIXPA
- PWC
- Suntory
- TCS
- Texas Instruments
- Viven Infomedia
- Works Applications

### **5.2 Internships by IIIT-D Students**

S. No.	Student's Name	Internship
1	Neha Bansal	Microsoft Development Center (Bangalore)
2	Taran Chugh	INRIA, Nancy Grand Est (France)
3	Lakshay Pandey	Zomato (New Delhi)
4	Arpan Jati	IIT-Kharagpur & DRDO (Bangalore)
5	Raghav Sethi	Microsoft Development Center (Hyderabad)
6	Naman Kohli	University of Houston, Texas, USA
7	Daksha Yadav	University of Sassri, Italy
8	Srishti Gupta	University of Buffalo, New York
9	Arun Kumar Jindal	Microsoft Corporation India, Gurgaon
10	Chirag Gupta	SimplyLearnt.com
11	Jatin Kumar	Infosys (Bangalore)
12	Sudip Mittal	IIIT- Delhi & CDAC-Noida
13	Tarun Vashidh	Infosys (Hyderabad)
14	Mayank Pundir	Microsoft Development Center (Hyderabad)
15	Prachi Jain	ISI, Univ. of Southern California, LA & Bell Labs
		Dublin, Ireland
16	Aayush Jain	TCS iLabs, Gurgaon
17	Aadish Gupta	Infosys (Hyderabad)
18	Mehak Soni	Infosys (Bangalore)
19	Akash Vanjani	Microsoft IDC
20	Anish Kumar	HISP
21	Lakshay Gupta	HISP
22	Nikhil Mahajan	Accenture R&D
23	Nikita Dagar	HISP
24	Pranav P Raj	Microsoft IDC
25	Priyanshi Mittal	Infosys-Protege
26	Rahul Bhatnagr	Infosys-Protege
27	Saloni Jain	Infosys-Protege
28	Saurav Bose	Infosys-Protege
29	Srishti Grover	HISP
30	Surabhi Kabra	HISP
31	Surbhi Jain	TCS Innovation Labs
32	Suvan Raj	HISP
33	Shwetang Kumar Shah	Infosys-Protege
34	Vani Sivasankar	Infosys-Protege
	24	5

### 5.3 Internships to other students in IIIT Delhi

35

S. No.	Name	Institute
1	Archit Garg	LNMIIT, Jaipur
2	Mugdha Gupta	LNMIIT, Jaipur
3	Garima Gupta	KUK
4	Abhinav Johri	LNMIIT, Jaipur
5	Shivam Bhatia	MBM Engineering College
6	Shivani Jain	MBM Engineering College
7	Mayank Jain	MBM Engineering College
8	Anuradha	Vaishno Devi University, Jammu
9	Bhupendra Singh	Central University of Rajasthan
10	Pankaj Garg	Central University of Rajasthan
11	Ankita Jain	MBM Engineering College
12	Abhishek Kumar	IIT Kharagpur
13	Ishan Malhotra	Vellore Institute of Technology
14	Karandeep S Bhatia	NSIT
15	Sivaranjani S	College of Enginnering, Chennai
16	Anurag Gupta	Institute of Engineering & Tech
17	Divyanshi Verma	Delhi Technological University
18	NikhilAgarwal	IIT (BHU)
19	Shalin Verma	PTU (Punjab)
20	Richa Choudhary	Delhi Technological University

### 6 Awards and Recognition

Our distinguished faculty members have earned a number of awards and recognitions and continue to make considerable difference in IT and allied domains. These are highlighted below.

### 6.1 Faculty

- Donghoon Chang, Arnab Kumar, Somitra Kr Sanadhya, "1st and 2nd Preimage Attacks on the reduced version of SHA-3" => (the **best poster award** of Third Annual Research Showcase of IIIT-Delhi, March 2013)
- Gaurav Gupta received best poster award on work in progress "Mobile Touchscreen Dynamics" at Research Showcase 2013.
- Aggarawal, A., Rajadesingan, A., and Kumaraguru, P. PhishAri: Automatic Realtime Phishing Detection on Twitter. In Anti-Phishing Working Group e-Crime Researchers Summit (2012). Tier II. Best Paper Award
- Winner, Best poster award (among 30 posters). Gupta, S., Gupta, M., and Kumaraguru, P. OCEAN: Open source Collation of eGovernment data and Networks. Security and Privacy Symposium, IIT Kanpur. Feb 28—2 March, 2013.
- **2nd Runner's Up prize**, Best poster award (among 30 posters). Sachdeva, N., and Kumaraguru, P. U2P2: Understanding User Privacy Perceptions. Security and Privacy Symposium, IIT Kanpur. Feb 28 March 2, 2013.
- **2nd Runner's Up** prize (among 37 posters). Gupta, A., Chhabra, A., and Kumaraguru, P. Twit-Digest poster won the at IBM I-CARE 2012.

 Mayank Vatsa and Richa Singh- Best Poster Award, International Conference on Biometrics: Theory, Applications and System, 2012, September, Washington DC, USA

### **6.2 Students**

- Ph.D. student Kuldeep Yadav received 2nd prize, Honorary mention in MSR TechVista
- Team led by students Kuldeep Yadav and Siddhartha Ashthana won the 'Whodunnit challenge' in India
- Ph.D. Student Pandarasamy Arjunan received IBM Ph.D. Fellowship for 2013
- Ph.D. student, Nipun Batra received TCS fellowship
- Ph.D. student Monika Gupta received Prime Minister's Ph.D. research fellowship
- Ayushi Rastogi TCS Ph.D. Research Fellowship
- Ph.D. scholar Denzil Correa Recipient of NIXI Fellowship, and also won a contest at the Planning Commission's Hackathon
- Ph.D. students Kuldeep Yadav and Siddhartha Ashthana received honourable mentions at MSR TechVista
- Ph.D. student M Hasija received Prime Minister's Fellowship Scheme for Doctoral Research jointly from CII and DST to work in collaboration with Nokia Research, Finland in January 2013
- Ph.D. student K. Yadav won USD1,000 Google Best Presentation Award given to the best presentation at the Ph.D. Forum
- B. Tech. student N. Juneja got selected for Viterbi-India program at USC for Summer'13 to work with Prof Gaurav Sukhatme on the topic of Cloud-based Smartphone OS in VM
- Summer work of UG students Nikita Juneja and Shruti Kapoor with Dr Pushpendra Singh won first price and that of UG students Kshitiz Bakhsi, Nishant Jain and Arjun Ahuja won consolation price (among top 5 out of 30 submissions) at IIIT Delhi Research Showcase 2013
- Srishti (M.Tech.) & Niharika (Ph.D.) received Ist and 3<sup>rd</sup> best poster awards at IITK Security & Privacy Symposium
- Paridhi & Niharika (both Ph.D. scholars) won best student participation award at IITK Security & Privacy Symposium.
- Ph.D. Scholar Paridhi along with M.Tech. student Neha and B.Tech. student Megha won FICCI's 'Strengthening the Policing Contest 2013 – Ensuring Women Safety in India'.

### 7 Sports

A group of 49 students from IIIT-D led by Abhishek Singh performed stupendously in Twaran-2013, an 11-team sporting extravaganza in Gwalior, claiming gold in women's basketball and men's lawn tennis and settling for silver in two other events.

The national sports fest organized by ABVP-IIITM-Gwalior was held from January 24 to 27, with IIIT-D securing third position in the medal tally after IIIT-Gwalior (1st) and IIIT-Kanchipuram (2nd).

Students from IIIT-D took part in cricket, basketball, football, lawn tennis, badminton and table tennis matches, to name a few, and marvelled the viewers with their remarkable performances.

Apart from clinching gold in women's basketball and men's lawn tennis events, the IIIT-D team bagged silver in men's squash and women's volleyball. The men's squash match — where IIIT-D got a silver in a hard-fought contest against IIIT-Kanchipuram — witnessed a marathon game as the final set of the second match stretched to 16 deuces with IIIT-D's Abhishek Singh emerging victorious but IIIT-D eventually lost the third match and the gold to IIIT- Kanchipuram.

### Following is the medal list:

• Lawn Tennis (Boys): Gold

• Basketball (Girls): Gold

• Squash (Boys): Silver

• Volleyball (Girls): Silver

### 8 Administration and People

### 8.1 General Council

Mr Najeeb Jung, Chancellor, IIIT-Delhi

Lt Governor, Delhi

Mr Kiran Karnik, Chairman, Board of Governors, IIIT-Delhi

Prof Pankaj Jalote, Director, IIIT-Delhi

### Dr Thirumalachari Ramasami

Secretary, Department of Science and Technology (DST)

### Dr Arabinda Mitra

Executive Director, Indo U.S. Science and Technology Forum

### Dr B. K. Gairola

Director General, National Informatics Centre

### Dr V K Saraswat

Head, Defence Research and Development Organization (DRDO)

### Mr Som Mittal

President, NASSCOM

### 8.2 Board of Governors

### Mr Kiran Karnik, Chairman

Former President, NASSCOM

### **Dr PAnandan**

Executive Director, Microsoft Research India

### **Prof Rajeev Sangal**

Director, IIIT Hyderabad

### Prof Bijendra N Jain

Vice Chancellor, BITS Pilani

### **Prof Ranjit Roy Choudhary**

Former Professor of NII, New Delhi

Chairman, Task Force for Research, Apollo Hospitals Educational and Research Foundation

### Dr T V Mohandas Pai

Chairman, Manipal Global Education Services Pvt. Ltd

### Sh Shakti Sinha

Principal Secretary - Finance, Govt of NCT, Delhi

### Dr Jai Menon

Director, Bharti Airtel Limited

### Mr Lalmalswama

Principal Secretary, TTE

### Prof Pankaj Jalote, Director

Director, IIIT Delhi

### 8.3 Senate

1 Prof Pankaj Jalote, Chairman, Director IIIT-D

### **External Members**

- 2 Prof K K Biswas, IIT-Delhi
- 3 Prof Dheeraj Sanghi, IIT-Kanpur
- 4 Prof Dinesha, IIIT-Bangalore
- 5 Prof Jayanthi Sivaswamy, IIIT-Hyderabad
- 6 Prof M Chelliah, Yahoo!
- 7 Mr Mukesh K Mohania, IBM
- 8 Mr Sanjay Bahl, Microsoft
- 9 Mr Saugat Sen, Cadence
- 10 Mr C Anantaram, TCS

### **Internal Members**

- 11 Dr Amarjeet Singh, Faculty IIIT-D
- 12 Dr Astrid Kiehn, Faculty IIIT-D
- 13 Dr Debajyoti Bera, Faculty IIIT-D
- 14 Dr. Gaurav Gupta, Faculty IIIT-D
- 15 Dr Pushpendra Singh, Faculty IIIT-D
- 16 Dr Saket Srivastava, Faculty IIIT-D
- 17 Dr Shishir Nagaraja, Faculty IIIT-D
- 18 Dr Somitra Sanadhya, Faculty IIIT-D
- 19 Dr Subhasis Banerjee, Faculty IIIT-D
- 20 Dr Vinayak Naik, Faculty IIIT-D
- 21 Mr Vivek Tiwari, Sitting for Registrar
- 22 Ms Divya Bansal, UG Students Representative
- 23 Mr Piyush Yadav, PG Students Representative

### 8.4 Faculty Members

### Full time Faculty: Alexander Fell

(Assistant Profossor)

Ph.D. (2012), Indian Institute of Science, Bangalore, India Coarse Grain Reconfigurable Architectures (CGRAs), Network-on-Chip, Embedded Systems, FPGAs alex@iiitd.ac.in

### **Amarjeet Singh**

(Assistant Professor)

Ph.D. (2009), Electrical Engineering, University of California, Los Angeles Mobile Sensing, Approximation Algorithms, Environmental Monitoring, Low Cost Technologies <a href="mailto:amarjeet@iitd.ac.in">amarjeet@iitd.ac.in</a>

### **Anirban Mondal**

(Associate Professor)

Ph.D. (2003), Computer Science, National University of Singapore, Singapore

Database Management, Multi-dimensional Data Indexing, Mobile Data Management, Spatial DBMS and GIS, P2P Data Management, Datacentric Business Intelligence <a href="mailto:anirban@iiitd.ac.in">anirban@iiitd.ac.in</a>

### Angshul Majumdar

(Assistant Professor)

Ph.D. (2012), Electrical & Computer Engg., University of British Columbia, Canada Compressed Sensing, Low-rank matrix recovery, Magnetic Resonance Imaging, Color Imaging angshul@iiitd.ac.in

### Apala Guha

(Assistant Professor)

Ph.D. (2010), Computer Engineering, University of Virginia, Charlottesville, USA Energy efficient architectures, exascale computing challenges, performance portability, compilers, programming languages. apala@iiitd.ac.in

### Ashish Sureka

(Assistant Professor)

Ph.D. (2005), Computer Science, North Carolina State University, USA Data Mining, Text Mining, Natural Language Processing ashish@iiitd.ac.in

### Ashwin Srinivasan

(Professor)

Ph.D. (1991) Electrical Eng. and Computer Science, University of New South Wales, Sydney Inductive Logic Programming, Machine Learning, Modelling Systems in Biology, Information Extraction from Text

ashwin@iitd.ac.in

### **Astrid Kiehn**

(Associate Professor)
Ph.D. (1989), Computer Science, Technische Universitat Munchen Logic, Process Algebra, Concurrency Theory astrid@iiitd.ac.in

### A V Subramanyam

(Assistant Professor)
Ph.D. (2012), Computer Engineering, Nanyang Technological University, Singapore Information Hiding, Image and Video Forensics <a href="mailto:subramanyam@iiitd.ac.in">subramanyam@iiitd.ac.in</a>

### Debajyoti Bera

(Assistant Professor)
Ph.D. (2009), Computer Science, Boston University, USA
Quantum Computing, Complexity Theory, Cryptography
<a href="mailto:dbera@iiitd.ac.in">dbera@iiitd.ac.in</a>

### **Donghoon Chang**

(Assistant Professor)

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

Korea

Theory and Practice of Cryptography, Cryptanalysis, Cyber Security <a href="mailto:donghoon@iiitd.ac.in">donghoon@iiitd.ac.in</a>

### Gaurav Gupta

(Assistant Professor)
Ph.D. (2009), Computer Science, Jadavpur University, Kolkata Digital Forensics, Cyber/Information Security <a href="mailto:gaurav1980@gmail.com">gaurav1980@gmail.com</a>

### Haimonti Dutta

(Assistant Professor –PT)

Ph.D. (2007) University of Maryland, Baltimore County Large Scale Learning, Distributed and Parallel Data Mining, Distributed Optimization haimonti@iiitd.ac.in

### H. B. Acharya

(Assistant Professor)

Ph.D. (2012), Computer Science, University of Texas (at Austin)

Distributed Systems and Networks, Concurrent and Parallel Computing, Computational biology, Programming Languages

acharya@iiitd.ac.in

### Mayank Vatsa

(Assistant Professor)

Ph.D. (2008), Computer Science, West Virginia University, USA Biometrics, Computer Vision, Image Processing, Information Fusion mayank@iiitd.ac.in

### Mohammad S. Hashmi

(Assistant Professor)

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

RF Measurements, PA Design and Linearization, RF Systems, Software

Defined Radio

mshashmi@iiitd.ac.in

### Pankaj Jalote

(Professor & Director)

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

Champaign, USA

Software Engineering, Fault Tolerance, Distributed Systems

jalote@iiitd.ac.in

### P B Sujit

(Assistant Professor)

Ph.D. (2006), Aerospace Engineering, Indian Institute of Science, Bangalore Unmanned Vehicle (aerial, underwater, and surface), Multi-robot systems, Guidance and Control sujit@fe.up.pt

### Ponnurangam Kumaraguru

(Assistant Professor)

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

Cyber Crime, Cyber/Information Security, Privacy, Human Computer

Interaction

pk@iiitd.ac.in

### Pushpendra Singh

(Assistant Professor)

Ph.D. (2004), Université de Rennes, France

Middleware, Mobile Computing

psingh@iiitd.ac.in

### Rahul Purandare

(Assistant Professor)

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

Software Engineering, Program Analysis, Runtime Verification, Specification Mining, Automatic Program Repair purandare@iiitd.ac.in

### Raja Sengupta

(Associate Professor)

Ph.D. (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

### Rajiv Raman

(Assistant Professor)

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

Algorithms, Graphs, Combinatorial Optimization

rajiv@iitd.ac.in

### Richa Singh

(Assistant Professor)

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

Biometrics, Machine Learning, Pattern Recognition

rsingh@iiitd.ac.in

### Saket Srivastava

(Assistant Professor)

Ph.D. (2008), Electrical Engineering, University of South Florida, USA

Hybrid Nano/CMOS Architecture, Emerging Technologies, Device

Modeling and Simulation

saket@iiitd.ac.in

### Sandip Aine

(Asssitant Professor)

Ph.D. (2007), Indian Institute of Technology, Kharagpur

Artificial Intelligence, Combinatorial Optimization, Robotics, CAD for VLSI

sandip@iiitd.ac.in

### Sanjit Krishnan Kaul

(Assistant Professor)

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

Wireless Systems, Vehicular Networks, Delay Tolerant Networks,

Disaster Management, Intelligent Transportation

skkaul@iiitd.ac.in

### Shishir Nagaraja

(Assistant Professor)

Ph.D. (2008), Computer Security, University of Cambridge, UK

Network Security, Traffic Analysis, Anonymity, Complex Networks

nagaraja@iiitd.ac.in

### Shobha Sundar Ram

(Assistant Professor)

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

Electromagnetic sensor conceptualization, model and design, sensor circuit design and signal processing algorithms

shobha@iiitd.ac.in

### **Shreemoy Mishra**

(Assistant Professor)

Ph.D. (2008) Economics, Operations Research & Industrial

Engineering, University of Texas at Austin, Economics of Information,

Consumer Privacy, Asymmetric Information in Credit and Insurance Markets, Credit Scoring

shreemoy@iiitd.ac.in

### Somitra Kr. Sanadhya

(Assistant Professor)

Ph.D. (2009), Computer Science, Indian Statistical Institute, Kolkata

Cryptology, Machine learning and Bioinformatics

somitra@iiitd.ac.in

### Soshant Bali

(Assistant Professor)

(Currently on leave)

Ph.D. (2007), The University of Kansas

3G/4G Wireless Networks, Traffic analysis and Security, Internet Measurements

bali@iitd.ac.in

### Srikanta Bedathur

(Assistant Professor)

Ph.D. (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

### Sriram K

(Assistant Professor)

Ph.D. (2004), Chemistry, IIT Madras

Systems biology, Cell division cycle, Circadian rhythms, Computational cognitive neuroscience sriramk@iiitd.ac.in

### Subhasis Banerjee

(Assistant Professor)

Ph.D. (2007), Computer Science, Indian Institute of Science, Bangalore Computer Architecture, Performance Modeling of Computer Systems, Low Power Design <a href="mailto:subhasis@iiitd.ac.in">subhasis@iiitd.ac.in</a>

### Sujay Deb

(Assistant Professor)
Ph.D. (2012), Washington State University
Multi-core processor architectures, Wireless Network-on-Chip,
Emerging interconnection technologies for multi-core chips
sdeb@iiitd.ac.in

### Vikram Goyal

(Assistant Professor)
Ph.D. (2009), Computer Science and Engineering, IIT Delhi Databases, Data Privacy and Security vikram@iitd.ac.in

### Vinayak Naik

(Assistant Professor)
Ph.D. (2006), Computer Science and Engineering, Ohio State University, USA Mobile Computing, Sensor Networks, Wireless Networks, and Systems naik@iiitd.ac.in

### Vivek Bohara

(Assistant Professor)

Ph.D. (2011), Electrical and Electronic Engineering, Nanyang Technological University, Singapore Wireless communication, Cognitive and Cooperative wireless networks, Wideband Power amplifiers, Digital predistortion

vivek.b@iiitd.ac.in

### Visiting Faculty

### Prof Ranendra Narayan Biswas

Former Dean, Research and Development, IIT Kanpur and Former Director, CEERI, Pilani, Electronic Circuits, Microprocessor Architecture, Computer Networking <a href="mailto:rnb@iiitd.ac.in">rnb@iiitd.ac.in</a>

### Mr Hemant Kumar

Founder - Softek Ltd., VP at HCL Tech.
B.Tech.(1977), IIT Kanpur
Software Development, Compilers, Databases, Inventory Management and Banking Software.
<a href="mailto:hemantk@jeee.org">hemantk@jeee.org</a>

### Dr Parvesh Biyani

Inspire Fellow Ph.D. (2012), ECE, IIT Delhi Optimization for signal processing & communications prayeshb@iiitd.ac.in

### **Dr Dhruv Grover**

Ph.D. (2009), University of Southern California Computational Biology, Statistical genomics, Behavioural Neuroscience <a href="mailto:dhruv@iiitd.ac.in">dhruv@iiitd.ac.in</a>

### Prof Samaresh Chatterji

Ph.D. (1979),Mathematics,Wayne State University, Detroit, Former Dean – Academic Programs, DA-IICT, Gandhinagar Abstract Algebra, Graph Theory <a href="mailto:samaresh@iiitd.ac.in">samaresh@iiitd.ac.in</a>

### 8.5 Staff Members

Mr Ashwani Kumar Kansal - DGM/Registrar (i/c)

Mr Kapil Chawla - Controller of Finance

Mr Sanjay Roy - General Manager (Projects)

Mr Arun Verma – General Manager (Facilities)

Mr Vinod Kumar - PS to Director & Deputy Manager (Res & Dev)

Mr Abir Bhattacharya - Sr System Manager

Mr Amit Shankdhar - Assistant Manager (Finance & Account)

Ms Anuradha Sen - Assistant Manager (Internships & Placements)

Mr Ajay Kumar - Assistant Manager (Store & Purchase)

Mr Anoop Singh - Deputy Manager (HR & Support Service)

Ms Shweta Sachan - Assistant Manager (Systems & Networking)

Mr Vivek Tiwari - Deputy Manager (Academics & Student Affairs)

Mr Rajendra Kumar - Assistant Manager (Library & Information Service)

Mr Kuldeep Singh – Assistant Manager (Academics)

Ms Kiran Mamgain Sharma – Manager (Communications)

Ms Rashmil Mishra - DGM- (Corporate Relations & Placements)

Mr Rahul Gupta - Junior Research Engineer

Ms Sheetu Ahuja – Assistant Manager (Academics)

Mr Sudhir Kumar – Officer (Sports and Students' Facilities)

### 9 Infrastructure and Facilities

### 9.1 Campus Facilities

The Indraprastha Institute of Information Technology established by 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 the IIIT-D permanent campus, which is located behind the Phase III Okhla Industrial Estate at a distance if 1 ½ km (approx.) from the Okhla railway station, South Delhi.

### **Phase I Construction**

The new campus for the IIIT-D, which started its operations from its transit campus at NSIT Dwarka New Delhi, finally came up in Okhla Phase III New Delhi on a plot of 25 acres out of the 65-acre plot of the GB Pant Polytechnic earmarked for the purpose. The IIIT-D started its operations from the new campus from academic session starting July 2012.

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 was planned to be constructed in three phases.

The Phase I of the Campus with a covered area of 32,500 sqm consists of the following facilities that have been put to use:

- Academic R & D block
- lecture hall block
- Library cum Information Centre building
- Dining Block
- Boys Hostel
- Girls Hostel
- Faculty Residences
- Service Block
- 2 Nos STP
- Guard rooms
- 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 1 guest house flat, 1 community event flat and 2 small visiting faculty flats and terrace garden and stilted parking in the residential zone. There are intermittent sprawling greens between the buildings.

- The academic zone comprises separate blocks for Library cum Information Centre in G+3 storied block, the G+2 Lecture hall block, and the G+5 storied Research & Development block which houses the research labs, faculty seating, administrative and academic heads with their supporting staff.
- The student residential zone comprises separate blocks for the boys hostel G+7 with 350seats and girls hostel G+4 with 150 seats, and a G+3 Dining block with cafeteria and mess, student activity areas, a fully equipped gymnasium, music and art rooms.
- All the above areas except the faculty residences are served by the district cooling air-conditioning
  system cooled on selective basis during day/night /peak demand settings, housed in the service
  block. Use of VFD/VAV controlled systems, heat recovery wheel, temperature-based sensors with
  BMS controls run air-conditioning efficiently.
- Moreover, the building envelopes are made efficient to insulate from heat using dry cladding in external finishes and Double unit toughened glass of specified thermal resistivity and transmission values in academic areas and AAC blocks in place of regular brickwork in masonry in residential areas and hostels. Use of natural material and minimum use of high energy consuming materials are basic ingredients of the project aimed towards a green building.
- The electrical system on 11KVA supply is provided with a partial load backup from 2x500kva DG sets.
- The entire waste water generated in the campus is recycled using 2x65 kld STP and water so generated will be used for horticulture, flushing and air-conditioning works. The solid waste management is carried out through an NGO for ensuring proper disposal. The rain water is harvested in rain water harvesting pits and shales.
- The entire areas will be protected by fire alarm and fighting equipment as wet risers/sprinklers and latest smoke management systems.
- The telephony and networking is on a backbone of OFC cabling with redundancy using loop and star configurations.
- The entire rock excavated from the areas is broken down and mostly utilized in external development works. Utilization of energy saving lighting systems as CFLs and T5 fixtures, use of non-conventional energy through solar hot water systems with PNG backup reduces power consumption considerably.
- The sports arena has well-lit basket ball court with 5layers synthetic coating, 2nos concrete courts
  for tennis. Separate courts for badminton for boys and girls hostels, multipurpose sports field, volley
  ball courts and running tracks would operational shortly.
- The works of construction completed and commissioned for Academic zone and part of students hostels and dining areas were completed in July 2012 for partial occupation and faculty residences and boys' hostel by March 2013.

- The current campus can provide accommodation to about 500 students and 23 faculty members. Its office space is adequate to house 48 faculty members. The lecture hall and lab space can accommodate up to 1000 students.
- The present campus is maintained by dedicated teams for Facility Management and Security operations.

### **Phase II Construction**

The proposal for Phase-II for construction of another 60000 sqm to cater to 2500 students and 125 faculty has also been taken up with the Department of Training and Technical Education, Delhi Government.

### 9.2 Computer Laboratory Facilities

- No. of Servers 38 (IIIT-10 & Proj-28)
- Total Bandwidth 1GBPS from MKN & 10 Mbps as backup leased line
- Storage SAN and NAS 45.3 TB
- No. of Laptops 116
- No. of Projectors 20
- No. of Desktops 400, No. of clients in Labs, Academic-100 Library-170
- No. of Data cards 17
- Total Network Traffic 454 Mb max on peak hours
- No. of Printers and Scanners 91
- No. of wifi access points 82

### 9.3 Library Facilities

IIIT-D Library and Information Centre provides library and information services to its users including all Students, Ph.D./Research Scholars, Faculty and Staff Members. It supports the teaching, learning and research activities of the institute. The Library and Information Centre is fully automated using RFID Technology with EM Security System.

### **Books:**

S No	Curriculum Area	No of Books
1	Computer Science & Engineering	767
2	Electronics and Communications Engineering	1153
3	Mathematics	322
4	Humanities and Social Sciences	265
5	Sciences	96
6	General Books	105
	Total Number of Books	2708

### E-Resources (Subscribed through INDEST-AICTE Consortium):

- ACM Digital Library
- Elsevier's Science Direct
- IEL Online (IEEE/IET Electronic Library)
- Nature Online
- Springer's Lecture Notes in Computer Science (LNCS)

Magazines/Journals Subscription (Print): 18

Daily Newspapers: 5

DELNET Membership (Network of Libraries)

### Services:

- 24 X 7 Open Reading Hall with Wi-Fi Internet Connectivity
- Book Exhibition/Display
- Full text access of subscribed E-Resources
- Institute's Repository/Archive
- Inter Library Loan (ILL) and Document Delivery (DDS)
- Issue/Return of Books/Periodicals
- New Arrivals
- Online Book Reservation
- Online Catalogue
- Photocopy, Printing and Scanning
- Reference Service
- Scholar's Cabins
- User Orientation/Awareness Program
- Current Awareness

### 10 Financials

### 10.1 Highlights of financial results for the Financial Year 2012-13

Income	(Rs in Lakh)
Income from Conduct of Programs	833.26
Interest Income	66.92
Other Income	63.63
Expenditure	
Establishment	678.32
Administrative	538.59
Program Expenses	114.97
Depreciation	830.18
Others	33.58
Following have been the related figures of rec	eipts and payment of projects
Receipts	458.13
Expenses	295.71

### **Schedule 13: SIGNIFICANT ACCOUTING POLICIES**

### 1. Basis of Preparation of Financial Statements

The financial statements of the Institute have been prepared under the historical cost convention, on the accrual basis of accounting, in accordance with Generally Accepted Accounting Principles ("GAAP") in India. The financial statements are prepared to comply, in all material respects, with all the applicable accounting principles in India. The management evaluates all recently issued or revised Accounting Standards on an ongoing basis.

### 2. <u>Use of Estimates</u>

The preparation of the financial statements in conformity with GAAP requires that the management makes estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent liabilities as at the date of the financial statements and the reported amounts of income and expenses during the reported period. Examples of such estimates include future obligations under employee benefit plans, the useful lives of fixed assets etc. Contingencies are recorded when it is probable that a liability will be incurred, and the amount can be reliably estimated. When no reliable estimate can be made, a disclosure is made as contingent liability. Actual results could differ from those estimates.

### 3. Format of Accounts

For drawing the Balance Sheet (Statement of Sources and Application of Funds), Income & Expenditure Account, Receipts & Payments Statement and connected schedules, the Institute is broadly following the "Uniform Format of Accounting" prescribed for the autonomous bodies by the Ministry of Finance, Govt. of India.

### 4. <u>Depreciation/Amortization</u>

Depreciation/Amortization on assets are provided using the straight-line method based on useful/commerciallives of these assets as estimated by the Management. The amortization method is reviewed at each year end for any significant change in the expected pattern of the economic benefits.

The management estimated useful/commercial lives are as follows:

Category of Asset	Life (No. of years)
Building	15
Furniture & Fixtures	5
Office Equipment	5
Motor Vehicle	5
Library Books	5
Computers, Laptops, Printers, Mobile Phones etc.	3

Residual value of the asset is kept at 5%.

Individual assets costing less than Rs.0.05 Lakh are depreciated in full in the year of purchase.

### 5. Revenue Recognition

Revenue from Course Fee, Application Form Sale is recognized on provision of services. Interest Income on savings bank and term deposits is recognized on an accrual basis.

### 6. Project Funds

Project funds received by the Institute are reflected separately in Balance Sheet and expenditure on such projects is adjusted against these funds. Project overheads recovery is, however, reflected separately.

### 7. Fixed Assets

Fixed assets are stated at cost of acquisition including taxes, duties, freight and other incidental expenses relating to acquisition and installation. Capital work in progress is stated at cost and includes the cost of fixed assets that are not ready for their intended use at the Balance Sheet date.

### **8.** Investments

Investments (fixed deposits) are stated at cost.

### 9. Interest Earned on Tied Up Funds

Interest earned on funds received from Delhi Government for setting up the Institute, being on capital account, is considered as part of General Funds.

### 10. Employee Benefits

### a) Short-Term Employee Benefits

Short-term employee benefits including salaries, social security contributions, short term compensated absences (such as paid annual leave) where the absences are expected to occur within twelve months after the end of the period in which the employees render the related employee service, and non-monetary benefits (such as medical care) for current employees are estimated and measured on an undiscounted basis.

### b) Defined Contribution Plan

Institute's contributions paid/payable during theyear to National Pension Scheme are recognized in the Income & Expenditure Account.

### c) Defined Benefit Plan

Liabilities for gratuity funded in terms of a schemeadministered by the Life Insurance Corporation of Indiaare determined by Actuarial Valuation made at the end of each financial year. Provision for liabilities pending remittance to the fund is carried in the Balance Sheet.

Actuarial gains and losses are recognized immediately in the Income & Expenditure Account as income or expense. Obligation is measured at the present value of estimated future cash flows using a discounted rate that is determined by reference tomarket yields at the Balance Sheet date on Government bonds where the currency and terms of the Government bonds are consistent with the currency and estimated terms of the defined benefit obligation.

### d) Long-Term Liability

Long-term liability for compensated absences is provided based on actuarial valuation of the accumulated leave credit outstanding to the employees as on the Balance Sheet date.

### 11. Cash and Cash Equivalents

Cash comprises cash on hand and demand deposits with banks. Cash equivalents are short-term balances, highly liquid investments that are readily convertible into known amounts of cash and which are subject to insignificant risk of changes in value.

### 12. Inventory Valuation

Stock of stores, stationery and maintenance items etc. is valued at cost.

### **Schedule 14: NOTES TO ACCOUNTS**

### 1. Capital Commitments

Estimated value of contracts remaining to be executed on capital account and not provided for (net of advance) is Rs.977.00 Lakh (up to previous year Rs.3366.00Lakh).

### 2. Current Assets, Loans and Advances

In the opinion of the Institute, the current assets, loans and advances of the Institute have a realizable value to the extent shown in the accounts and the provision for all known liabilities including depreciation are adequate.

### 3. Taxation

The Institute is exempt from taxation.

### 4. **Projects**

All "Ongoing Sponsored Projects", Faculty Award Projects and Consultancy Projects are treated as liabilities.

- 5. During the year IIITD Gratuity Fund Trust has been created to provide gratuity benefit to employees of the Institute. Based on actuarial valuation an amount of Rs.42.93 Lakh has been remitted to the Fund Manager (M/s Life Insurance Corporation India Ltd.) for making the Policy live from 01.01.2013. As on 31.03.2013, actuarial valuation of liability stands at Rs.44.22 lakh. The Fund value as on 31.03.2013 after interest is Rs.43.04 Lakh. Provision of Rs.1.18 Lakh has been created to the extent of shortfall in the Fund Value as on 31.03.2013.
- 6. During the year an amount of Rs.11.10 Lakh has been deposited to the credit of the Govt. account towards income tax liability on accommodation leased to the faculty during the previous years 2009-10 to 2011-12. The amount has been grouped under the head "Prior Period Expenses" (Schedule-12).
- 7. Rent, Rates and Taxes (Schedule-10: Administrative Expenses) include payment of Rs.16.28 Lakh towards Property Tax for the year 2012-13 in respect of completed buildings of the Campus.
- 8. During the year land measuring 25 acres at Okhla Phase-III New Delhi allotted to the Institute by the Govt. of NCT of Delhi for developing permanent campus has been mutated in favor of Department of Training and Technical Education, Govt. of NCT of Delhi.
- 9. The Institute started functioning from its permanent campus in August, 2013. Based on certification of Project Management Consultant value of Capital Work In Progress amounting to Rs.6813.00Lakh, put to use as in August, 2013 has been capitalized (Schedule-3).
- 10. Amount of Rs.1421.00Lakh as on 31.03.2013 reflected as Capital Work In Progress in Schedule-3 (Fixed Assets) is based upon the running bills related to construction of the campus as certified by Project Management Consultant-M/s SHiFt.
- 11. During the year assets worth Rs.53.70 Lakhhave been handed over to NSIT. Depreciated value of assets as on 31.03.2013 has been written off in the books of account.

- 12. Fee waiver of Rs.10.25 Lakh during the year (previous year-Rs.7.25 Lakh) to students, as per Scheme approved by Board of Governors of the Institute, has been shown separately under Program Expenses (Schedule-12).
- 13. During the year depreciation on fixed assets has been charged on Straight Line Method (SLM). Adjustment in the value of depreciation has been carried out for years 2008-09 to 2011-12 as per details below. The adjusted amount has been shown in the Income & Expenditure Account under a separate head:

(Rs. in Lakh)

Financial Year	Depreciation		Charged to Income
	As per SL Method	As per WDV Method	& Expenditure Account
2008-09	9.26	6.60	2.66
2009-10	35.86	43.87	-8.01
2010-11	62.32	50.74	11.58
2011-12	72.35	50.87	21.48
Total	179.79	152.08	27.71

- 14. Provision of Rs.0.40 Lakh has been created for grant of non-productivity linked (Ad-Hoc) bonus for the year 2012-13 and Rs.26.97 Lakh for liability of the Institute towards accumulated en-cashable leave. The liability for leave en-cashment has been created at present value on 31.03.2013. Fund has been created for meeting the liability. Investments of the Institute have been earmarked to the extent of liability as on 31.03.2013.
- 15. Fixed Assets worth Rs.68.27 Lakh pertaining to Research Projects have been shown in the Projects' Balance Sheet. Equivalent liability has been created in favor of the Sponsors. No depreciation on such assets has been charged.
- 16. The figures of debtors and creditors in the accounts are subject to confirmation.
- 17. Income & Expenses in the annual accounts are for "on-going" operations of the Institute. All recognized gains and losses have been accounted for.
- 18. Previous year's figures have been re-grouped or re-arranged wherever necessary.
- 19. The Figures in the Receipts & Payments Account, Income & Expenditure Account and Balance Sheet are rounded off to the nearest rupee.
- 20. Schedules 1 to 14 Forms an integral part of accounts and have been duly authenticated.

For and on behalf of Indraprastha Institute of Information Technology, Delhi For P. Aggarwal & Associates Chartered Accountants

(Kapil Chawla) Controller of Finance Sd/-(Pankaj Jalote) Director Sd/-(Pradeep Aggarwal) Partner M.No.-081984

Date:20.08.2013

### Indraprastha Institute of Information Technology-Delhi Okhla Phase-III New Delhi-110020 STATEMENT OF SOURCES & APPLICATIONS OF FUNDS AS ON 31ST MARCH, 2013

(Amount in Rs.)

Particulars	Schedule	31.03.2013	31.03.2012
Sources of Funds			
Interest free Loan	1	150,00,00,000	130,00,00,000
General Fund	1A	-68,773,102	61,82,972
Projects Fund	2	3,85,58,808	2,12,32,332
Corpus Fund	2A	2,17,27,059	1,76,01,894
Total		149,15,12,765	134,50,17,198
Application of Funds			
Fixed Assets (Gross Block)		75,10,85,097	3,03,32,984
Less: Depreciation		9,47,35,808	1,51,89,797
Fixed Assets (Net Block)	3	65,63,49,289	1,51,43,187
Capital Work in Progess (Incl. advances)	3	30,66,42,902	59,89,68,019
Investments	4	49,02,20,296	74,31,41,404
Current Assets, Loans & Advances	5	9,14,09,995	9,37,91,162
Less: Current Liabilities & Provisions	6	5,31,09,717	10,60,26,574
Net Current Assets		3,83,00,278	-12,235,412
Total		149,15,12,765	134,50,17,198

Significant Accounting Policies & Notes on Financial Statements

13 & 14

Schedules 1 to 14 form an integral part of of Financial Statements as per our Audit Report of even date annexed.

For and on behalf of Indraprastha Institute of Information Technology, Delhi For P. Aggarwal & Associates Chartered Accountants

(Kapil Chawla) Controller of Finance Sd/-(Pankaj Jalote) Director Sd/-(Pradeep Aggarwal) Partner M.No.-081984

Date:20.08.2013

### INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED ON 31ST MARCH, 2013

(Amount in Rs.)

Particulars	Schedule	31.03.2013	31.03.2012
Income			
Programs	8	8,33,26,061	3,84,09,300
Interest on Deposits / Bank Accounts etc.	8A	66,91,908	24,24,107
Income from Other Sources	8B	63,41,087	22,58,211
Prior Period Income	8C	21,532	6,89,722
Total		9,63,80,588	4,37,81,340
Expenditure			
Establishment	9	6,78,31,768	3,89,73,263
Administrative Expenses	10	5,04,26,474	1,57,20,323
Repairs & Maintenance	11	34,33,523	24,50,303
Programme Expenses	12	1,14,96,650	83,24,153
Deferred Revenue Expenditure	7	-	24,27,389
Value of Assets Transferred to NSIT	3	20,04,037	-
Written-off			
Loss on Disposal of Assets (net of gain)	3	10,534	-
For the year	3	8,02,46,907	50,87,131
Due to change in Method (refer Note 13)	3	27,70,896	-
Prior Period Expenses	12A	13,43,696	-
Total		21,95,64,485	7,29,82,562
Excess of Income over Expenditure transferred to General Fund		-123,183,897	-29,201,222

Schedules 1 to 14 form an integral part of of Financial Statements as per our Audit Report of even date annexed.

For and on behalf of Indraprastha Institute of Information Technology, Delhi For P. Aggarwal & Associates Chartered Accountants

Sd/(Kapil Chawla)
(Pankaj Jalote)
(Pradeep Aggarwal)
Controller of Finance
Director
Partner
M.No.-081984

Date:20.08.2013

# RECEIPTS AND PAYMENTS STATEMENT FOR THE YEAR ENDED ON 31ST MARCH, 2013

(Amount in Rs.)

					•	( mino dans ( )
Receipts	31.3.2013	31.03.2012	Payments	nts	31.03.2013	31.03.2012
I. Opening Balances			I. E	Expenses		
(a) Cash in hand	17,299	58,790	(a)	Establishment Expenses	6,43,45,442	2,65,20,954
(b) Bank Balance	6,53,49,292	75,68,729	(q)	) Administrative Expenses	5,30,21,522	1,32,48,604
(c) Investments in Banks	74,31,41,404	60,44,81,895	(S)	Programme expenditure	1,10,89,495	71,81,314
(d) Imprest Balances	22,500					
II. Loan Received			II. E	Expenditure on Fixed Assets		
(a) From Delhi Govt.	20,00,00,000	50,00,00,000	ઝ	& Capital Work in Progress		
III. Interest Received			(a)	) Purchase of Fixed Assets	4,14,15,455	40,49,027
(a) on Banks Fixed Deposits	2,38,45,839	3,66,41,939	(q)	Work In Progress	37,12,51,065	23,35,18,323
(b) on Savings Banks Account	27,82,210	17,24,855				
6			III. P	III. Project Expenditure	2,12,30,652	1,19,09,343
IV. Income						
(a) Income from Programme	8,31,68,921	3,84,84,300	IV. 0	Other Payments	11,53,50,965	13,49,47,719
(b) other Inocme	8,59,637	2,90,936				
			C	Closing Balances		
V. Project Receipts	4,03,60,792	2,31,47,263				
			(a)	) Cash in hand	1	17,299
VI. Other Receipts	4,70,39,193	2,75,07,073	(q)	Bank Balance	3,86,62,195	6,53,49,293
			<u> </u>	() Investments in Banks	49,02,20,296	74,31,41,404
			(p)	l) Imprest Balances	_	22,500
Total	120,65,87,087	123,99,05,780	T	Total	120,65,87,087 123,99,05,780	123,99,05,780
For and on behalf of				F	For P. Aggarwal & Associates	k Associates

Indraprastha Institute of Information Technology, Delhi For and on behalf of

(Pankaj Jalote) Director

(Pradeep Aggarwal) Partner

Chartered Accountants

M.No.-081984

Date: 20.08.2013

(Kapil Chawla) Controller of Finance

### Schedules forming part of Balance Sheet for the period ended 31st March, 2013

### Schedule 1: Interest Free Loan from Delhi Govt.

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Opening Balance	130,00,00,000	80,00,00,000
Add: Releases during the year	20,00,00,000	50,00,00,000
Balance at the end of the year	150,00,00,000	130,00,00,000

### Schedule 1A: General Fund

Particulars	31.03.2013	31.03.2012
Opening Balance	61,82,972	-15,226,704
Add: Interest Earned on Tied Up Funds	4,91,27,822	5,06,10,898
Less: Excees of Expenditure over Income B/f	-123,183,897	-29,201,222
Less: Appropriation for Matching of Corpus Funds	-900,000	-
	-68,773,102	61,82,972

### Schedules forming part of Balance Sheet for the period ended 31st March, 2013

**Schedule 2 : Project Funds** 

		_		
Name of The Project	Balance	Income	Expenses /	Balance
	as on		Adjustments	as on
	01.04.2012			31.03.2013
Project & Workshop Funds:				
Consultancy ProjectsCP-001/NASSCOM/JALOTE/001	40,788	0	40,788	0
CP-002/SYSTEM CONSULTANT/JALOTE/002	2,289	0	2,289	0
CP-003/IKSL-2010AMARJEET/010	2,95,432	0	2,95,432	0
CP-005/Nokia-2010/Naik/014	32,53,397	0	3,00,000	29,53,397
CP-006/Nokia-2010/Naik/015	15,29,559	36,077	1,72,155	13,93,481
CP-007/NHAI/constultancy/2012/Dr.Gaurav Gupta	0	60,000	60,000	0
CP-08/Acenture/-2012/ Ashsish	1,20,000	0	0	1,20,000
	52,41,465	96,077	8,70,664	44,66,878
Sponsored Research Projects				
SRP/02/microsoft/cse/2004-0029-52/jalote 003	8,53,031	0	1,80,812	6,72,219
SRP-03/MICROSOFT/2009/JALOTE/0004	4,20,000	0	0	4,20,000
SRP/05/DIT/2009/RICHA/0007	-110,280	27,16,881	25,59,117	47,484
SRP-06/NISG/SOA BASED ARCH IOR SMART /008	1,49,790	0	0	1,49,790
SRP-07/DIT-2010/PK/0012	16,82,518	24,70,050	32,57,465	8,95,103
SRP-08/Microsoft Travel Grant/2010/Jalote/013	1,43,548	0	0	1,43,548
SRP-09/PI-2010/PK/0016	5,82,713	3,80,883	8,21,934	1,41,662
SRP-010/DST-2010Jalote/0017	5,86,410	0	0	5,86,410
SRP-011/DST-2010/Mayank/0018	14,591	0	14,591	0
SRP-012IBM/Jalote/0019	2,93,332	0	24,000	2,69,332
SRP-014/DRDO/Dr Somitra /2011	1,03,581	10,80,000	11,55,273	28,308
SRP -15 DST/PK/	2,42,177	0	4,963	2,37,214
SRP-016/National Geographic/Naik	9,86,960	0	1,13,820	8,73,140
SRP-017/Royal Insititute/ Dr Rajasen	2,02,406	0	1,39,950	62,456
SRP- 018/ DIT / Amarjeet /2012	3,92,497	78,92,363	46,95,328	35,89,532
SRP-19/SERB / Fast Track /DST/ Pushpendra	2,80,130	18,000	2,99,353	-1,223
SRP-20/NRB / DRDO /Somitra	8,00,000	0	3,46,298	4,53,702
SRP-21/SERB/Dr. Vikram/Fastrack	0	3,60,000	2,50,577	1,09,423
SRP-22/DST/Fastrack/Richa	1,34,294	11,27,000	3,29,951	9,31,343
SRP-23/DST/SERB/Dr. Ashish	0	2,05,000	1,34,497	70,503
SRP-24/IGSTC/2012/MPG/Dr.Srikanta	0	18,24,865	12,45,637	5,79,228
SRP/25/SERB/2770/Dr.Anirban/12-13	0	1,25,000	14,228	1,10,772
SRP-27/Saket/TCID/CARS/12-13/DRDO	0	11,08,225	3,64,457	7,43,768
SRP-29/CARS/DRDO/Dr.Pushpendra/12-13	0	7,00,000	8,46,491	-146,491
SRP-30/Dr.Gaurav/2012-13/DDSDDDF	0	41,64,000	8,40,805	33,23,195
Srp-31/2013/DIT-DDMDCE/Dr.Pushpendra	0	19,20,000	3,20,000	16,00,000

SRP-33/Dr.P.K/DIT/AMTU/2013 SRP/28/DST(Ramanujam)/Prof.Ashwin/12-13	0	37,50,000	7,50,000	30,00,000
SKP/28/DST(Ramanujam)/Pfot.Ashwiii/12-13	0	6,99,824	60,000	6,39,824
	77,57,698	3,05,42,091	1,87,69,547	1,95,30,242
Workshop Project Funds				
WSP-01/Value Received/cloud Computing /Jalote/0009	52,000	0	52,000	0
WSP-02/INDO US Workshop/Prof. Jalote/0025	-	0	0	
WS-03/IUSSTF Workshop Jalote/0026	-9,768	9,768	0	0
WS-06/MDM Conference /IBM India /Jalote	10,382	12,943	0	23,325
WS-08/Winter schoo / PK 2011	2,46,389	-	2,46,389	
WS-10/Dr.Somitra /Cryptography/DRDO/12-13	0	23,81,500	20,09,209	3,72,291
WS-11/Indo UK/2012-13	0	6,50,000	1,00,000	5,50,000
WS-12/DRDO/Dr.Pushpendra/SAG/2013	0	1,89,589	1,89,589	0
WP-05/Microsoft/Mysore Park Series/Jalote/0027	13,86,943	11,84,618	11,91,308	13,80,253
ICB Conference	-7,777	7,777		0
WP-06/Research Showcase/P.K/11-12	50,000	16,571	63,142	3,429
WP/MSR India Research Showcase-2013		50,000		50,000
ISEC 2013	0	9,83,186	7,14,707	2,68,479
ISG/NORAD/Dr. Amarjeet/2012-13 and receipt for	0	26,97,425	19,31,228	7,66,197
Baseline Data Collection				
	17,28,169	44,52,766	38,51,637	34,13,972
Other Funds:				
Faculty Research Grants				0
IBM Faculty Award/Nagaraja/020	36,985	0	0	36,985
FAP/SEIF/Prof.Jalote/2010-11/0028	11,59,370	0	0	11,59,370
FAP-01/DST-INSPIRE/2012-13/Dr.Pravesh Biyani		19,80,000	5,51,595	14,28,405
FAP-02/DST INSPIRE/2013/Dr. Angshul		7,00,000	35,000	6,65,000
FAP-03/DST INSPIRE/2013/Dr.Sujay Deb		7,00,000	35,000	6,65,000
FP-004/TCIL/Dr.Amarjeet/2013		1,60,000	0	1,60,000
Pankaj Jalote Travel Grant		33,309	11,001	22,308
IBM/Dr Amarjeet	2,94,161	0	0	2,94,161
MSR Research Award	7,69,608	64,500	5,09,971	3,24,137
SWAP Training Collaboration	5,000	0	0	5,000
	22,65,124	36,37,809	11,42,567	47,60,366
Fellowship Amounts				0
FP/001/2010/Support For Marathon/0021	2,14,277	0	4,000	2,10,277
FP/002/Support For PhD. Fellowship	25,17,281	7,29,789	5,51,209	26,95,861
FP/002/Support For PhD. Fellowship / DCM / PK	3,28,000	5,72,000	9,00,000	0
FP/003/Support For PhD. Fellowship /TCS	11,80,318	53,48,871	34,81,135	30,48,054
FP-05/MSRI/Support for Summer Internship-2013	0	3,36,900	0	3,36,900
FP-07/MSR Travel Grant/Siddharth Asthana	0	80,000	0	80,000
TCS Faculty / PhD Students Fund	0	16,258	0	16,258
	42,39,876	70,83,818	49,36,344	63,87,350
Grand Total	2,12,32,332	4,58,12,561	2,95,70,759	3,85,58,808

Excess expenditure over income is adjusted against future receipts.

Schedules forming part of Balance Sheet for the period ended 31st March, 2013

Schedule 2A: Corpus Funds

Name of The Project	Balance as on 01.04.2012	Addition	Interest Earned/ Accrued	Expenses / Adjustments	Balance as on 31.03.2013
Faculty Research Fellowship Cont. Received:	L39 VV VC		020 17 1	O	0 00 00
A K KI ISHI daswan II racun'y Kesearen Fellowship- T. V Raman Pai Faculty Research Fellowship-D	24,44,037		4,04,8 <i>/</i> 9 4,64,879	0	29,09,530
Hemant Bharat Ram Faculty Research Fellowship	0	9,00,000		0	9,00,000
Institute's Matching Cont. from General Fund	40,00,000	9,00,000		0	49,00,000
	88,89,438	18,00,000	9,29,758	0	1,16,19,196
Research Travel Funds Cont. Received:					0
S.D.Shibulal Research Travel Fund	24,44,657	1	4,64,879	0	29,09,536
Prof. Pankaj Jalote Research Travel Fund	23,73,910	1	9,30,528	0	33,04,438
Institute's Matching Cont. from General Fund	38,93,889	0		0	38,93,889
	87,12,456	0	13,95,407	0	1,01,07,863
GRAND TOTAL	1,76,01,894	18,00,000	23,25,165	0	2,17,27,059

Interest Earned/Accrued includes interest of Rs. 7,30,195/-pertaining to the year 2011-12

## Schedules forming part of Balance Sheet for the period ended 31st March, 2013

SCHEDULE 3-FIXED ASSETS & CAPITAL WORK IN PROGRESS

(Amount in Rs.) (Rs.) 31.03.2012 27,52,403 55,30,189 14,79,97,710 59,89,68,019 96,29,92,191 61,41,11,206 46,61,13,496 15,44,49,372 15,08,120 7,38,369 8,47,719 1,51,43,187 45,09,70,309 37,66,387 NET BLOCK 14,21,27,239 16,45,15,663 30,66,42,902 31.03.2013 (Rs.) 97,82,910 65,63,49,289 48,61,28,988 25,41,022 4.779 8,30,35,103 10,52,587 10,12,892 34,90,741 6,93,00,267 9,47,35,808 1,51,89,797 0 0 0 9,47,35,808 3,28,69,932 31.03.2013 (Rs.) 2,21,83,314 13,88,749 1,55,80,673 8,48,329 1,121 1,90,54,472 11,00,367 17,08,851 18,702 0 -1,245,815 -700,896 -700,896 0 0 0 Adjust-1,39,835 2,56,887 0 ments\*\*\* -315,391 2,80,390 1,83,198 During Deduction DEPRECIATION the Year 62,91,303 (Rs.) 2,05,60,156 7,45,759 3,53,630 8,02,46,907 3,28,69,932 1,73,05,025 4,11,130 8,02,46,907 1.121 50,87,131 17,08,851 Upto 31.03.2012 0 (Rs.) 0 19,38,549 0 0 0 1,05,35,185 16,09,612 3,86,103 1,51,89,797 1,51,89,797 1,01,21,368 4,08,847 3,11,501 Total as on 31.03.2013 (Rs.) 2,53,63,583 48,13,03,293 51,89,98,920 10,52,18,417 8,83,54,739 51,99,592 5.900 75,10,85,097 16,45,15,663 30,66,42,902 105,77,27,999 21,52,954 14,21,27,239 39,29,771 18,61,221 During 54,95,986 68,67,59,295 1,02,800 68,12,63,309 Adjustments 26,75,400 68,12,63,309 Deduction / the Year 26,94,488 23,298 GROSS BLOCK During Additions 5,900 37,24,20,239 the Year 51,89,98,920 1,21,78,795 8,39,09,426 51,99,592 20,35,548 10,29,036 72,62,48,099 38,89,38,192 16,45,70,740 31,67,32,553 62,93,01,003 111,51,86,291 10,21,88,881 7,02,001 1,65,17,953 .32,87,588 57,04,936 3,03,32,984 45,09,70,309 14,79,97,710 59,89,68,019 Opening Balance (Rs.) 11,47,216 as on 01.04.12 18,94,223 11,59,220 71,39,801 SLM Life 15 m S S 2 2 3 2 S Advance against CWIP Office Automation\*\* Furiture& Fixture\* Progress (CWIP) Intengible Assets Capital Work in Capital work in ab equipment Library books Previous Year Fixed Assets Computer\*\* Equipment\* Grand Total **Particulars** Fotal (A) Building Total (B) Progress Vehicle Land

<sup>\*</sup> Includes Value of Assets Transferred to NSIT Written-off.

<sup>\*\*</sup> Includes Gross Value of Assets Disposed off.

<sup>\*\*\*</sup> Includes adjustment on account of change in method of depreciation (refer Note 13)

### Schedules forming part of Balance Sheet for the period ended 31st March, 2013

**Schedule 4: Investments** 

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Institute:		
FDs with Andhra Bank	10,10,93,084	32,69,76,908
FDs with Bank of India	27,00,00,000	35,00,00,000
FDs with Dena Bank	10,00,00,000	-
FDs with IDBI Bank	-	6,00,00,000
Reserch Projects:		
FDs With Andhra Bank	61,89,502	61,64,496
FDs With HDFC Bank	1,20,37,710	-
Bank Account (IIITD)	9,00,000	-
	49,02,20,296	74,31,41,404

### Schedule 5: Current Assets, Loans and Advances

Particulars	31.03.2013	31.03.2012
Interest Accrued on Fixed Deposits	3,40,30,891	2,42,90,167
Stock of Consumable Items	15,99,071	2,19,823
Prepaid expenses	22,51,056	17,75,240
Advances to Parties	7,50,125	604
Advances To Staff	28,14,712	3,96,975
TDS Receivable	6,12,332	4,07,018
Other Recoverables	53,87,484	13,34,744
Security Deposits	51,45,029	-
Sundry Debtors (Receivable from Students)	1,57,100	-
Cash and Bank Balances:		
1. Cash in hand	-	17,299
2. Balance With Bank	3,86,62,195	6,52,46,878
3. Cheques In Hand	-	1,02,414
	9,14,09,995	9,37,91,162

**Schedule 6: Current Liabilities & Provisions** 

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Current Liabilities		
Duties & Taxes	64,50,700	70,69,505
Tender EMDs	90,800	20,56,000
Outstanding Liabilities	80,82,021	32,58,266
Security Deposits	1,21,93,858	50,20,577
Security Deposits (Hostel)	15,87,000	9,70,000
Withheld Amounts	30,01,177	11,10,152
Caution Deposits	29,96,864	18,50,000
Sundry Creditors	1,42,22,843	8,21,72,064
AICTE Scholarship	-	9,04,000
NPS Contribution Payable	7,35,035	3,215
Other Liabilitites (Hostel & Mess Fee)	8,95,049	2,44,234
Provisions		
Provision for NPS Liability	-	13,68,561
Provision for Gratuity (refer Note 5)	1,17,932	-
Provision for Accumulated Earned Leave	26,96,438	-
(refer Note 14)		
Provision for NPL Bonus (refer Note 14)	40,000	-
	5,31,09,717	10,60,26,574

### **Schedule 7 : Deferred Revenue Expenditure**

Particulars	31.03.2013	31.03.2012
Civil Work at Transit Campus:		
Opening Balance	-	9,92,096
Addition During the period	-	-
Electrical Work at Transit Campus:		
Opening Balance	-	-
Addition During the period	-	13,75,066
Lan Networking at Transit Campus:		
Opening Balance	-	60,227
Addition During the period	-	-
Total	-	24,27,389
Less: 1/2rd Written-off	-	24,27,389
(charged to Income & Expenditure Account)		
Balance at the end of the year	-	-

### Schedules forming part of Income and Expenditure Account during the period ended 31st March, 2013

### **Schedule 8: Income from Programs**

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Fee from Programs	6,81,62,500	3,71,35,000
Hostel Fee	1,28,63,616	-
Sale of Application Forms	22,99,945	12,74,300
	8,33,26,061	3,84,09,300

### Schedule 8A: Interest on Deposits/Bank Accounts etc.

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Interest on Savings Bank Accounts Interest on Mobilization Advances Interest on Advance Consumption Deposit with BSES	27,44,374 37,60,186 1,87,348	16,69,196 7,54,911 -
Deposit with BSES	66,91,908	24,24,107

### **Schedule 8B: Income From Other Sources**

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Receipt for Withdrawal from Programs	7,33,000	2,38,000
Donations	1,70,000	1,50,000
Sale of Tender Forms	18,500	18,000
Overhead Income From Projects	48,53,242	18,03,420
Other Receipts	5,66,345	48,791
	63,41,087	22,58,211

### **Schedule 8C: Prior Period Income**

Particulars	31.03.2013	31.03.2012
Interest Accured on Fixed Deposits	-	6,71,020
HRA Recovery	15,532	-
Conference Receipt	6,000	-
Excess Depreciation written back	-	18,702
	21,532	6,89,722

**Schedule 9 : Establishment Expenses** 

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Salaries & Allowances	5,75,75,578	3,56,27,118
Other Remunerations	17,000	90,000
Medical Expenses	13,41,372	8,88,247
Re-location Expenses	15,60,127	9,00,403
Staff Development Expenses	1,89,914	98,934
Death-cum-Retirement Gratuity (refer Note 5)	42,93,407	-
Provisions:		
Provision for NPS	-	13,68,561
Provision for Gratuity (refer Note 5)	1,17,932	-
Provision for Accumulated Earned Leave	26,96,438	-
(refer Note 14)		
Provision for NPL Bonus (refer Note 14)	40,000	-
	6,78,31,768	3,89,73,263

### $Schedule\ 10\ : Administrative\ Expenses$

Particulars	31.03.2013	31.03.2012
Electricity and Power	1,51,53,735	24,83,911
House Keeping & Maintenance	1,13,56,014	26,09,705
Security	86,10,295	26,97,686
Travelling & Conveyance (including Vehicle Hiring)	53,37,637	25,66,335
Faculty/Staff Recruitment	18,52,698	8,98,939
Rent, Rates & Taxes (refer Note 7)	16,52,970	35,940
Communication Expenses	14,64,309	11,84,836
(Incl. Postage & Telephone)		
Meetings Expenses	10,20,154	6,49,107
Printing & Stationery	7,87,308	2,68,720
Legal and Professional Charges	7,60,187	6,73,380
Campus Inaugration Expenses	6,83,165	-
Convocation Expenses	4,93,953	-
News Paper and Periodicals	3,54,713	1,36,315
Hospitality and Guest House Maintenance	1,84,415	1,27,869
Lease Line Connctivity Expenses	1,68,208	8,27,869
Miscellaneous Exp.	1,53,053	63,511
Hiring of Equipment	1,31,919	-
Advertisement	92,273	4,12,261
Audit (Statutory) Fees	83,084	70,787
Bank Charges	82,334	13,152
Amount Written off (Stationary Item)	4,050	-
	5,04,26,474	1,57,20,323

### Schedules forming part of Income and Expenditure Account during the period ended 31st March, 2013

**Schedule 11: Repairs and Maintenance** 

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Fee from Programs	6,81,62,500	3,71,35,000
Hardware & Software	24,47,547	16,74,887
Networking, Web Designing & R&M of Computers	2,683	35,633
General Repairs & Maintenance	9,83,293	7,39,783
	34,33,523	24,50,303

### **Schedule 12: Programs Expenditure**

(Amount in Rs.)

Particulars	31.03.2013	31.03.2012
Honorarium to Visiting Faculty	17,60,605	33,13,527
Students' Activities / Welfare	8,12,680	14,24,886
Entrance Test	12,43,779	7,88,719
Faculty Development	2,38,819	2,09,561
Stipend & Teaching Assistance	34,28,046	14,03,868
Online Library System Membership	24,38,328	10,98,353
Placement Expenses	29,247	23,054
Lab. Equipment Consumables	49,455	62,185
Fee Waiver to Students (refer Note 12)	10,25,000	-
Others	4,70,691	-
	1,14,96,650	83,24,153

### **Schedule 12A: Prior Period Expenses**

Particulars	31.03.2013	31.03.2012
Internet Expenses	1,075	-
Repairs and Maintenance Expenses	1,83,546	-
Sponsorship (Esya'2011) Written-Off	39,200	-
Miscll. (Esya'2011) Expenses	10,000	-
Income Tax Liability on Leased Accomodation	11,09,875	
	13,43,696	-

## Balance Sheet as on 31st March, 2013 (Project Accounts)

Liabilities	Amount (Rs.)	t (Rs.)	Assets	Amount (Rs.)	(Rs.)
Project & Workshop Funds:			Project Assets		68,25,836
Consultancy Projects	44,66,878		Earmarked Funds:		
Sponsored Research Projects	1,95,30,242		FDs With Andhra Bank	61,89,502	
Workshop Project Funds	34,02,972	2,74,00,092	FDs With HDFC Bank	1,20,37,710	
Earmarked Funds:			Interest Accrued on FDs	16,35,713	
Faculty Research Fellowship	1,16,19,196		In HDFC SB Account (Hemant Bharat Ram FRF)	9,00,000	
Research Travel Funds	1,01,07,863	2,17,27,059	Receivable from IIITD (Hemant Bharat Ram FRF)	9,00,000	
Other Funds:			TDS Receivable	64,134	2,17,27,059
Faculty Award Projects	47,71,367		Current Assets, Loans & Advances:		
Fellowship Projects	63,87,350	1,11,58,717	1. Bank Balances		
Current Liabilitites:		ī	Andhra Bank SB Account No. 1778		2,07,01,310
Expenses Payable		27,041	HDFC SB Account No. 14		78,14,012
TDS Payable		4,997	HDFC SB ISEC Account No.45		2,63,278
Sponsored Assets:			2. Loans and Advances		15,13,085
Deptt. Of Information Technology	45,71,786		3. Receivable from Microsoft Lab.		3,36,900
Deptt. Of Science & Technology	4,87,811		Research India Pvt. Ltd. IIIT, Delhi		79,62,262
Defence Research &	14,67,364				
Development Organisation					
Indian Institute of Technology, Delhi	56,490				
Privacy International (UK)	1,08,507				
Royal Institute	1,950				
National Geographic Research	92,778				
Microsoft India Ltd.	39,150	68,25,836			
		6,71,43,742			6,71,43,742
For and on behalf of Information Technology,	Technology, Delhi	lhi	For P. A. Cha	For P. Aggarwal & Associates Chartered Accountants	sociates ants

(Pankaj Jalote) Director

Controller of Finance Date: 20.08.2013

(Kapil Chawla)

(Pradeep Aggarwal) Partner M.No.-081984

### (Project Accounts) Income & Expenditure Account for the period ending 31st March, 2013

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
Bank Charges	3,582	Institute's Share of Overheads:	
		WS-10/DRDO/2013/Dr. Somitra	2,16,500
		SRP-14/DRDO/Dr.Somitra/2011	80,000
		SRP-28/DST(Ramanujam)/	60,000
		Prof.Ashwin/12-13	
		SRP-21/DST (SERB)/FAST TRACK/	38,102
		Dr. Vikram Goel	
		SRP-05/DIT-2009/Dr.Richa Singh &	2,23,750
		Dr.Mayank Vatsa	
		SRP-22/DST/Fast track/Dr.Richa Singh	97,560
		SRP-05/DIT-2009/Dr.Richa Singh &	2,23,750
		Dr.Mayank Vatsa	
		SRP-19/DRDO/Dr.Pushpendra Singh	1,40,000
		WS-12/DRDO/Dr. Pushpendra	31,598
		SRP-31/DIT(ESDSD)/Dr.Pushpendra Singh	3,20,000
		SRP-18/DIT-Indo US/Dr.Amarjeet Singh	8,30,000
		SRP-27/DRDO/Dr.Saket & Dr.Subhashis	1,83,333
		SRP-30/2013-14/DIT/Dr.Gaurav Gupta	6,94,000
		SRP-22/DST/Fast track/Dr.Ashish Surekha	28,808
		SRP-07/DIT/DR.PK& DR.SUREKA	2,02,500
		SRP-07/DIT/DR.PK& DR.SUREKA	2,02,500
		WS-11/DST/Indo-UK/Dr.P.K	1,00,000
		SRP-33/DIT/Dr. P.K.	7,50,000
		SRP-24/MPG/Dr.Srikanta Bedathur	1,00,000
		FAP-01/DST/Inspire/Dr.Pravesh Biyani	35,000
		FAP-02/Inspire/Dr. Angshul	35,000
		FAP-03/Inspire/Dr. Sujay Deb	35,000
		SRP-25/SERB/Dr. Anirban Mandal	13,228
		FP-03/TCS/Ayushi Rastogi	12,613
		ISG-01/NORAD/Dr. Amarjeet Singh	2,00,000
			48,53,242
<b>Excess of Income</b>	56,50,777	Other Misc. Receipts	
Over Expenditure			
(Adusted to IIIT,		Interest on Savings Bank Account	8,01,117
Delhi A/c in Balance sheet)			
	56,54,359		56,54,359

For and on behalf of Indraprastha Institute of Information Technology, Delhi For P. Aggarwal & Associates Chartered Accountants

	Sd/-	Sd/-
(Kapil Chawla)	(Pankaj Jalote)	(Pradeep Aggarwal)
Controller of Finance	Director	Partner
Date:20.08.2013		M.No081984

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### ANNUAL 12/13 REPORT 12/13

INDRAPRASTHA INSTITUTE

VFORMATION TECHNOLOGY, DELHI



Indraprastha Institute of Information Technology, Delhi Okhla Industrial Area, Phase-III New Delhi-110020, INDIA







