

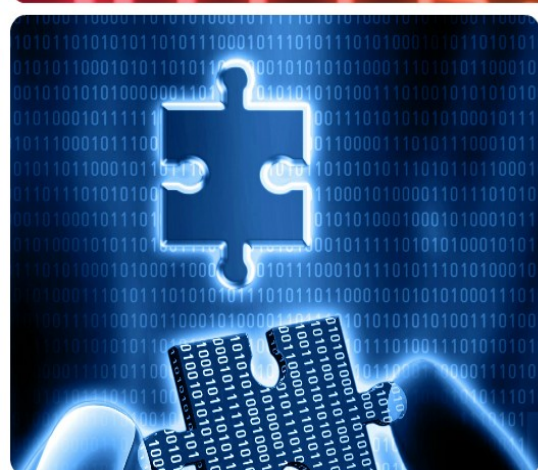


DEPARTMENT OF INFORMATION TECHNOLOGY

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA

SURATHKAL, MANGALORE 575025 INDIA

2017 - 2018



IT Building

Profile of the Department

Established in the year 2000, the Department of Information Technology is the youngest among the 14 departments at NITK Surathkal. The department strives to be a centre for excellence, innovation and research with dedicated faculty, highly motivated students, state-of-the-art facilities and an innovative teaching-learning environment. The department was accredited by the National Board of Accreditation (NBA) for 3 years in 2008 and for 5 years w.e.f. July 1st, 2014.

The department has consistently demonstrated its potential for excellent research through quality scholarly publications - more than 126 peer-reviewed journal and 360 refereed conference publications. Several research and consultancy projects are also underway as part of various MoUs with reputed industry and academic organizations. Our students have consistently achieved near 100% placements and have demonstrated a high level of success at pursuing post graduate and doctoral studies at top universities of the world as per QS World University Rankings - Massachusetts Institute of Technology, Carnegie Mellon University, Yale, Columbia, Purdue and in the IITs & IIMs.

Vision

- To achieve excellence in education so as to enable students to establish themselves as world-class professionals and empower them with the proficiency & knowledge to excel in the dynamic field of IT.

Mission

- To create and disseminate knowledge through research, teaching & learning, and to enhance society in meaningful & sustainable ways.
- To serve our students by inculcating in them problem solving, leadership & teamwork skills, and the value of commitment to quality, ethical behavior & respect for others.

| | | |
|--|--|--|
| Head of the Department G. Ram Mohana Reddy | | Faculty <i>Professors</i> Ananthanarayana V. S. G. Ram Mohana Reddy |
| Year of Establishment 2000 | | |
| Student Information | | |
| <i>Programme</i> | <i>Number of Students</i> | <i>Assistant Professors</i> Biju R. Mohan Dinesh Naik Geetha V. Jaidhar C. D. Nagamma Patil Sowmya Kamath S. |
| B.Tech | 307 | |
| M.Tech | 32 (full-time) | |
| M.Tech (By Research) | 03 completed | |
| PhD | 14 completed 03 submitted 17 in progress. (15 full time+ 2 part time) | |

Degrees and Programmes

- B.Tech (Information Technology)
- M.Tech (Information Technology)
- M.Tech (in Information Technology by Research)
- PhD (Information Technology)

Current Research Areas

The Department of Information Technology is actively involved in advanced research at the UG, PG and doctorate (PhD) levels, in fundamental and cutting edge technologies. Current areas of research interest include - Affective Computing; Big Data/Cognitive Analytics; Bio-inspired Computing; Bioinformatics; Cloud Computing; Computer Networks; Cryptography; Database Systems; Data Mining; Distributed Computing; Green Computing; Healthcare Analytics; High Performance Computing; Human Centred Computing; Internet of Things & Smart Sensing applications; Mobile and Vehicular Adhoc Networks; Machine Learning; Natural Language Processing & Understanding; Pervasive Computing; Requirements Engineering; Service-oriented Computing; Software Engineering and Architecture; Security Issues in Information, Networks and VoIP; Semantic Web Technologies; Social Network Analysis and Wireless Sensor Networks among others.

Research Publications

Peer-reviewed International Journals – 126

Refereed International Conferences – 360

Refereed National Conferences – 4

Recent Technical Events

- B.Tech (IT) and M.Tech (IT) Major Project Exhibition **IT-ProFest 2017** on 6th April 2017
- Workshop on **Deep Learning for AI** by Intel, Bangalore, on 20 March 2017
- Workshop on **Internet of Things** by Research Design Lab, Mangalore, on 13 January 2017
- Workshop on **Containers Technology** by Dell R&D, Bangalore, on 18th March 2016.
- Alumni Interaction with **Mr. Srivatsa S Bhat, B.Tech-IT (2011) Graduate**, currently pursuing his PhD at Massachusetts Institute of Technology (MIT), Boston, USA on 22nd January 2016
- Expert Lecture on **Technical Writing** by Dell R & D on 11th January 2016.
- Workshop on **Intel HPC Code Modernization (Parallelization)** on 7th November 2015
- TEQIP-II Sponsored 3-day Research Workshop on "**Human Centered Computing: Tools and Applications**", 25th – 27th June 2015.
- TEQIP-II Sponsored 3-day Research Workshop on "**Research Issues In Green Cloud Computing**", 18th – 20th June 2015.



ADCONS Conference



Workshop on AI



Japan Visit

Some Research and Consultancy Projects

| <i>Name of Research Project</i> | <i>Sponsoring Agency</i> | <i>Funding</i> | <i>Duration</i> | <i>Principal Investigators</i> |
|--|--|----------------|-----------------|--|
| A Framework for Deep Learning based Analytics for Intelligent Healthcare Applications | DST-SERB (Early Career Research Grant) | ₹ 35 Lakhs | 2017-20 | Sowmya Kamath S |
| Load Balancer for Resource Management & Cost Optimization for Guaranteed Task Completion without SLA Violation in a Cloud Platform | IBM India | ₹ 4.8 Lakhs | 2016-17 | G. Ram Mohana Reddy and Shridhar Domanal |
| Quality of Service Aware Routing in MANETs | MHRD, Rajeev Gandhi National Research Fellowship | ₹ 8 Lakhs | 2011-14 | G. Ram Mohana Reddy and Kiran Manjappa |
| Content Based Video Copy Detection & Prevention of In-Theatre Piracy | DST (Women Scientist Research Fellowship) | ₹ 30 Lakhs | 2011-14 | G. Ram Mohana Reddy and R. Roopalakshmi |
| Security Issues in WSNs | NITK Startup Grant | ₹ 5 Lakhs | 2010-13 | Geetha V |

| <i>Name of Consultancy Project</i> | <i>Sponsoring Agency</i> | <i>Budget</i> | <i>Duration</i> | <i>Faculty Member</i> |
|--|--------------------------------|---------------|-----------------|---|
| Smart HCC: Automated Health Care Centre Activities | Institute Research Grant, NITK | ₹ 5 Lakhs | 2017-18 | G. Ram Mohana Reddy and T.P Ashok Babu |
| NITK-MIS Project (Academic Centric Student Information System Development) | NITK | ₹ 54 Lakhs | 2016-ongoing | Ananthanarayana V.S. Biju R Mohan Sowmya Kamath S |
| CCMT 2016 (Centralised Counselling for M.Tech/M.Arch/M.Plan Admissions) | MHRD | ₹ 4.5 Crores | 2015-16 | Ananthanarayana V.S (Technical Convener) |
| DASA Admissions Portal | MHRD | ₹ 20 Lakhs | 2011-14 | Ananthanarayana V.S Biju R Mohan |
| Development of NPTEL Course on Distributed Computing Systems | MHRD NPTEL | ₹ 3.5 Lakhs | 2012-13 | Ananthanarayana V.S. |

Industry-Institute Interactions

The Department has several industry linkages and MoUs at various stages/levels, some of which are-

- Huawei Technologies India Ltd., Bangalore - NITK MOU (2015)
- AMD India, Bangalore - NITK MOU (2012)
- Dell India R&D Centre, Bangalore (2012)
- Accenture, Mumbai – NITK MOU (2008 for 1 year)
- EMC Bangalore (2008 for 2 years)
- HP Bangalore (2008)
- Pennsylvania State University (PSU) (2008 for 5 years)

Detailed Faculty Information



Ananthanarayana V S, *PhD (IISc Bangalore), Post Doctoral Fellow (Canada)*
Dean (Research & Consultancy) and Professor

407, 4th Floor, IT Building
Email - anvs@nitk.ac.in; Phone: +91-824-247 3550

Research Interests: Databases, Data Mining, Distributed Computing, Pervasive Computing, Semantic Web, Service-oriented Computing



Biju R Mohan, *M.Tech (Pondicherry University), currently pursuing PhD*
Assistant Professor

411, 4th Floor, IT Building
Email - biju@nitk.ac.in; Phone: +91-824-2473558

Research Interests: Software Aging, Virtualization, Software Engineering, Software Architecture, Software Patterns, Requirements Engineering.



Dinesh Naik, *M.Tech (VTU), currently pursuing PhD*
Assistant Professor

409, 4th Floor, IT Building
Email - din_nk@nitk.ac.in; Phone: +91-824-2473552

Research Interests: Web Semantics, Cloud Computing, Computer Networks



G. Ram Mohana Reddy, *PhD (University of Edinburgh, UK)*
Professor and Head

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Email - profgrmreddy@nitk.ac.in; Phone: +91-824-2474056/2473551

Research Interests: Affective Computing, Bio-inspired Cloud Computing, Cognitive Computing, Energy Efficient Green Data Centers, Social Multimedia/Social Networks Analysis



Geetha V, *PhD (NITK Surathkal)*
Assistant Professor

410, 4th Floor, IT Building
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Research Interests: Wireless Sensor Networks, Computer Networks



Jaidhar C.D., *PhD (NIT Trichy)*
Assistant Professor

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Research Interests: Cryptography and Network Security, Computer Networks and Information Security, Security Issues in Voice over IP and Cloud Computing.



Nagamma Patil, *PhD (IIT Roorkee)*
Assistant Professor

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Research Interests: Data Mining, Data Mining Techniques to Bioinformatics, Soft Computing



Sowmya Kamath S, *PhD (NITK Surathkal)*
Assistant Professor

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Research Interests: Big Data Analytics, Natural Language Processing and Understanding, Machine Learning, Semantics, Service-oriented Computing

Students' Information

Placement Statistics (2016 - 2017)

| <i>Degree</i> | <i>Total Eligible</i> | <i>Total Placed</i> | <i>Highest Pay Package</i> | <i>Average Pay Package</i> |
|---------------|-----------------------|---------------------|----------------------------|----------------------------|
| B.Tech (IT) | 88 | 84 | 25 Lakhs | 11.87 Lakhs |
| M.Tech (IT) | 16 | 16 | 22 Lakhs | 11.55 Lakhs |

Recent news on admissions to top universities (as per QS World University Rankings)

| <i>Name of Student</i> | <i>Institute</i> | <i>Programme</i> |
|--|---|-------------------------|
| Srivatsa S Bhat | Massachusetts Institute of Technology (MIT), USA | Integrated MS-PhD |
| Shrimai Prabhumoye | Carnegie Mellon University (CMU), USA | Integrated MS-PhD |
| Anirudha R C Anusha Bagalkotkar Bharath Kumar M J Poorva Rane Pravalika Avarru | Carnegie Mellon University (CMU), USA | M.S in Computer Science |
| Medhini Narasimhan | University of Illinois at Urbana-Champaign (UIUC) | M.S in Computer Science |
| Bhavana R Saarthak Chandra | Columbia University | M.S in Computer Science |
| Gaurav Singh Thakur | Purdue, USA | M.S in Computer Science |

Statistics on IT students pursuing higher studies (last 5 years)

| <i>Students pursuing higher education</i> | <i>Number of Students</i> | |
|--|---------------------------|---------------|
| | <i>In India</i> | <i>Abroad</i> |
| Master's Degree in IT and related fields | 8 | 58 |
| Master's Degree in Management field | 16 | 4 |
| Integrated Master's & PhD in IT & related fields | 2 | 5 |

Recent news on IT Entrepreneurs

| <i>Student</i> | <i>Degree and Batch</i> | <i>Start-up Initiative</i> |
|---------------------------------------|-------------------------|--|
| Rishab Doshi, Rohit John, Siddharth P | B.Tech, Batch of 2016 | Campus Connect |
| Neelesh Soni | B.Tech, Batch of 2012 | Co-founder/CEO of Pictor Imaging and Rhapsody Labs |
| Rohit Manglik, Piyush Rai | B.Tech, Batch of 2012 | Founders, EduDrona.com |
| Shashank N.D & Abhinav Lal | B.Tech, Batch of 2009 | Co-founders of Practo.com |
| Parkal Suhas Kamath | B.Tech, Batch of 2007 | COO, UnWrapIndia.com and Eye & Buy Retail |
| Vikram Nayak | B.Tech, Batch of 2007 | CEO, Maximiner Analytics, Bangalore |
| Srinivasan Narayanan | B.Tech, Batch of 2005 | Co-founder, LMNOP Solutions |

Departmental Facilities

Classrooms

The department has well furnished classrooms and seminar rooms to facilitate learning, discussions and debates. The specially designed classrooms are equipped with audio visual aids (sound system and LCD projectors) & internet connectivity (Wi-Fi) to enhance the learning process. The classrooms are situated in the same building as the department, on the 3rd, 5th and 6th floors.

Department Library

The department has its own library, situated on the 5th floor, offering reference books for all subjects and areas of Information Technology. It also includes a Library Information System developed in-house, providing search and discovery functionalities for the library's various resources like seminar reports, UG/PG/PhD Theses and technical videos in a single search. It provides account/history management, automated issue and alert system etc.

Seminar Hall

The department's seminar hall is on the 5th floor and is equipped with ceiling-mounted LCD projector, and wireless audio system. It can comfortably seat more than 125 people and is used for conducting classes, seminars and distinguished lectures.

Conference Room

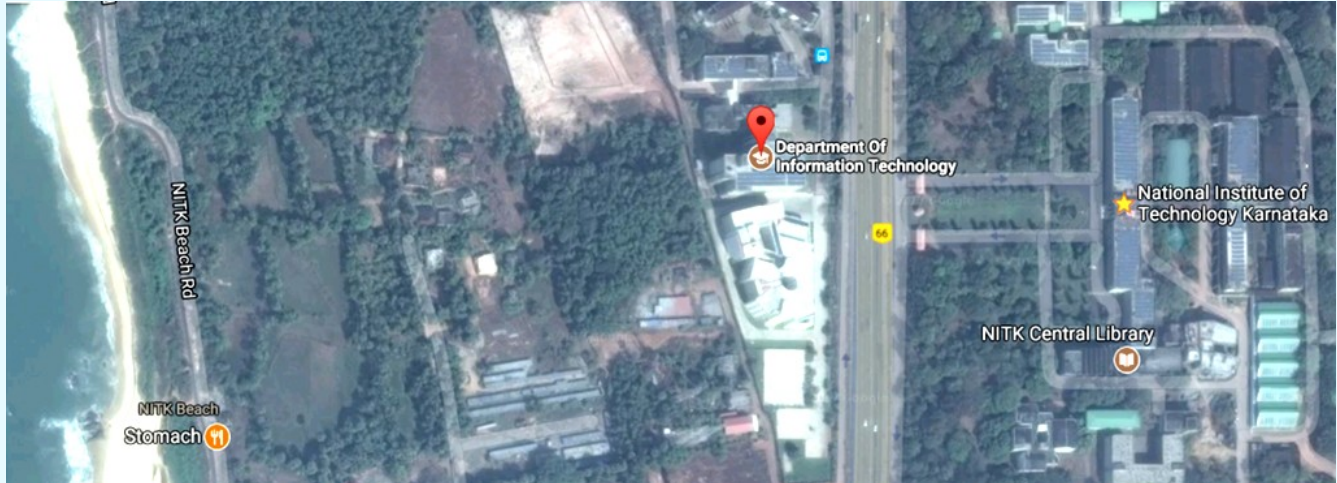
The Department Conference Room is equipped with LCD projector and teleconferencing facilities and is located on the 4th floor. It is used for conducting presentations, teleconferences, webinars etc.

Computing Facilities

The department's laboratory setup provides excellent facilities to cater to the varied needs of B.Tech, M.Tech & M.Tech(by research) students and PhD scholars. The department has several labs for general programming language laboratory courses for UG and dedicated labs for fields like Virtualization, Data Processing, Internet Technology and System Software. PG students and research scholars work in dedicated labs equipped with high-end machines and facilities. Some state-of-the-art computing facilities available in the various labs include –

- 1 Dell Power Edge R730 XD2U Rack Mount Server with 2 NVIDIA TESLA M40 GPU
- 2 Xeon Rack Mounted DL160 Server running Ubuntu and 1 HP Proliant 16GB RPS Server
- 2 Power Edge 420 server and IBM POWER 7 Virtualization Server
- 1 Blade Server, 1 IBM Server and 1 rx2600 Itanium Server running Linux for Laboratory support
- 3 high-end Dell and 11 HP Workstations
- 2 CUDA based server for High Performance computing
- 181 high-end Desktop systems with i7 processor and 8GB RAM
- 15 high-end Desktop systems with i7 processor and 4GB RAM
- 30 HP Desktop with i5 Processor, 7 IBM and 17 HP desktops with Pentium III processor
- Desktop Virtualization facility (20 NComputing Devices)
- 2D and 3D camcorders for High Performance Multimedia Lab and Applications
- Microsoft Kinect, Sense 3D, Myo, Leapmotion, Arduino, Raspberry Pi3, Health Monitoring Sensors, VR based head Mounted Devices etc. for Human Computer Interaction Applications
- MEMSIC Wireless Sensor Network Professional and Educational Kits
- Microprocessor and Interface Kits for hands on experiments.
- LAN Trainer Kits for Network and routing simulation experiments
- Rational Rose Suite 7 and IBM's Business Intelligence Suite

Department Location



Contact Information

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Web Semantics
Cloud Computing
MATHEMATICS
WEB TECHNOLOGIES
ALGORITHMS
INFORMATION TECHNOLOGY
PROGRAMMING
Data Mining
HCI
NLP
Operating Systems
Computer Networks
Software Engineering
Computer Graphics
DATA STRUCTURES
Information Security
DATABASES
Distributed Computing
Parallel Computing
Computer Networks
Digital Systems
Computer Organization
Wireless Sensor Networks
Mobile Computing
Big Data Analytics
Microprocessors