



DEPARTMENT OF INFORMATION TECHNOLOGY
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
SURATHKAL, MANGALORE 575025 INDIA

2018 - 2019



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 sponsored research projects, consultancy work, high-quality scholarly publications, text books, open source software and other professional contributions. Several research and consultancy projects are also underway as part of various MoUs with reputed industry and academic organizations. Our students have consistently achieved 100% placements and have demonstrated a high level of success in pursuing post graduate and doctoral studies at top universities of the world as per QS World University Rankings, like 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 & 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 Members <i>Professors (HAG Scale)</i> Ananthanarayana V. S. G. Ram Mohana Reddy |
| Year of Establishment 2000 | | |
| Student Information | | <i>Assistant Professors (Grade I)</i> Biju R. Mohan Geetha V Jaidhar C D Sowmya Kamath S |
| <i>Programme</i> | <i>Number of Students</i> | |
| B.Tech | 306 | <i>Assistant Professors (Grade II)</i> Anand Kumar M Bhawana Rudra Dinesh Naik Kiran M Nagamma Patil |
| M.Tech | 35 (full-time) | |
| M.Tech (By Research) | 03 completed 01 ongoing | <i>Adjunct Professors</i> Prakash S. Raghavendra, AMD Sidney David Rosario |
| PhD | 19 completed 18 in progress. (16 full time; 4 part time) | |

Degrees and Programmes

- B.Tech (Information Technology)
- M.Tech (Information Technology) and M.Tech (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; Blockchains, Cloud Computing; Computer Networks; Computer Vision, Cryptography; Cyberphysical Systems, Database Systems; Data Mining; Distributed Computing; Green Computing and Green Datacenters; 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 and Books

Peer-reviewed International Journals – 137

Refereed International Conferences – 412

Refereed National Conferences – 6

Books and book chapters - 45

Recent Events

- **Induction Programme** for First year B.Tech students (25-29 Jul 2018)
- Five Day Training Program on **Information Security Essentials Awareness**, July 23-27th, 2018
- TEQIP-III sponsored 5-day Short-term Workshop on **IPv4 Networking Fundamentals** (as part of NITK-GEC Jhalawar Twinning activities) from 19-23 March 2018.
- TEQIP III sponsored workshop on **Intellectual Property Rights**, April 13th, 2018 (Startup Cell)
- **Curriculum Revision Workshop** on 27th April 2018
- B.Tech (IT) and M.Tech (IT) Major Project Exhibition "**IT-ProFest 2018**" on 5th April 2018
- Programming Contest "**AMD TechDay 2018**" on 23 March 2018.
- Expert Lecture on "**Software - Science, Engineering and Technology**", by Prof. Anil Kumar Tripathi, IIT-BHU, on 8th January 2018



SOME RESEARCH & CONSULTANCY PROJECTS

| <i>Research Project</i> | <i>Sponsoring Agency</i> | <i>Funding</i> | <i>Duration</i> | <i>Principal Investigators</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------|-----------------|-----------------------------------------|
| Effective Online Framework Solution for Protein Sequence Alignment and to Predict Protein Structure & its subcellular localization using Amino Acid Molecules | Vision Group on Science and Technology, DST, Govt. of Karnataka | ₹ 5 Lakhs | 2018-19 | Nagamma Patil |
| 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 on Cloud | IBM India | ₹ 4.8 Lakhs | 2016-17 | G. Ram Mohana Reddy Shridhar Domanal |
| Quality of Service Aware Routing in MANETs | MHRD, Rajeev Gandhi National Research Fellowship | ₹ 8 Lakhs | 2011-14 | G. Ram Mohana Reddy Kiran M |

| <i>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 IRIS Project (Academic-centric Student Information System Development) | NITK | ₹ 54 Lakhs | 2016-ongoing | Ananthanarayana V.S. Biju R Mohan G. Ram Mohana Reddy Sowmya Kamath S |
| CCMT 2016 (Centralised Counselling for M.Tech/ M.Arch/M.Plan Admissions) | MHRD | ₹ 4.5 Crores | 2015-16 | Ananthanarayana V.S (<i>Technical Convener</i>) |
| DASA Admissions Portal | MHRD | ₹ 20 Lakhs | 2011-14 | Ananthanarayana V.S Biju R Mohan G Ram Mohana Reddy |

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-to date)
- AMD India, Bangalore - NITK MOU (2012-to date)
- Dell India R&D Centre, Bangalore (2012-to date)
- 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

Professors (HAG Scale)



Ananthanarayana V S, *PhD (IISc Bangalore), Post-doc (Canada)*

Deputy Director

Email - anvs@nitk.ac.in; Phone: +91-824-2473550

Research: Databases, Data Mining, Distributed/Pervasive Computing, Service-oriented Computing



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

Head of the Department

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

Research: Affective Computing, Cloud/Cognitive Computing, Green Data Centers, Social Networks

Assistant Professors (Grade I)



Biju R Mohan, *PhD (NITK Surathkal)*

Email - biyu@nitk.ac.in; Phone: +91-824-2473558

Research: Software Aging, Virtualization, Software Engineering, Software Architecture



Geetha V, *PhD (NITK Surathkal)*

Email - geethav@nitk.ac.in; Phone: +91-824-2473554

Research: Internet of Things, Wireless Sensor Networks, Computer Networks



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

Email - jaidharc@nitk.edu.in; Phone: +91-824-2473553

Research: Cryptography, Network/Information Security, Security Issues in Cloud Computing.



Sowmya Kamath S, *PhD (NITK Surathkal)*

Email - sowmyakamath@nitk.edu.in; Phone: +91-824-2473557

Research: Big Data Analytics, Natural Language Processing/Understanding, Machine Learning

Assistant Professors (Grade II)



Anand Kumar M, *PhD (Amrita Vishwa Vidyapeetham)*

Email - m_anandkumar@nitk.edu.in; Phone: +91-824-2473561

Research: Natural Language Processing, Information Retrieval, Machine/Deep Learning



Bhawana Rudra, *Ph.D (IIT Allahabad)*

Email - bhawanarudra@nitk.edu.in; Phone: +91-824-2473560

Research: Future Internet and its Security, Information Security, Wireless Sensor Networks



Dinesh Naik, *M.Tech (VTU), [pursuing PhD]*

Email - din_nk@nitk.ac.in; Phone: +91-824-2473552

Research: Web Semantics, Cloud Computing, Computer Networks



Kiran M, *PhD (NITK Surathkal)*

Email - kiranmanjappa@nitk.edu.in; Phone: +91-824-2473561

Research: Bio-inspired Computing, Blockchains, Soft Computing, WSN, MANETs.



Nagamma Patil, *PhD (IIT Roorkee)*

Email - nagammapatil@nitk.ac.in; Phone: +91-824-2473559

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

Adjunct Professors



Prakash Raghavendra, *PhD (IISc Bengaluru)*

Email - Prakash.Raghavendra@amd.com

Research: Compilers, Deep Learning, High Performance Computing



Sidney Rosario, *PhD (Univ. of Rennes, France), Post-doc (Univ of Texas, Austin)*

Email - m_anandkumar@nitk.edu.in; Phone: +91-824-2473561

Research: Natural Language Processing, Information Retrieval, Machine/Deep Learning

STUDENTS' INFORMATION

Placement Statistics (2017 - 2018)

| <i>Degree</i> | <i>Total Eligible</i> | <i>Total Placed</i> | <i>Highest Pay Package</i> | <i>Average Pay Package</i> |
|---------------|-----------------------|---------------------|----------------------------|----------------------------|
| B.Tech (IT) | 100 | 100 | 31 Lakhs | 13.85 Lakhs |
| M.Tech (IT) | 18 | 17 | 18 Lakhs | 11.63 Lakhs |

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

| <i>Name of Student</i> | <i>Institute</i> | <i>Programme</i> |
|------------------------------------------------------------|-------------------------------------------------------|-------------------------|
| Aditya Bhat | Purdue University | Integrated MS-PhD |
| Soundarya R | National University of Singapore | Integrated MS-PhD |
| Anirudha R C Shrimai Prabhumoye | Carnegie Mellon University (CMU), USA | Integrated MS-PhD |
| Rishab Ranga, Poorva Rane Pravalika Avarru | Carnegie Mellon University (CMU), USA | M.S in Computer Science |
| Karthik Senthil, Medhini Narasimhan, Pradnyesh Joshi | University of Illinois at Urbana- Champaign (UIUC) | M.S in Computer Science |
| Pruthvi H R, Vaibhav Arcot | University of Pennsylvania | M.S in Computer Science |
| Vishakh Padmakumar, Varun D N | New York University (NYU) | 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 | 71 |
| Master's Degree in Management field | 21 | 6 |
| Integrated Master's & PhD in IT & related fields | 3 | 7 |

Some IT Entrepreneurs

| <i>Student</i> | <i>Degree and Batch</i> | <i>Start-up Initiative</i> |
|------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------|
| Shashank N.D & Abhinav Lal | B.Tech, Batch of 2009 | Co-founders of Practo.com, World's second largest healthcare startup (as per Forbes India) |
| Nitin Bantwal Rao | B.Tech, Batch of 2008 | Co-founder, SunGlass Inc (<i>San Francisco</i>) and DPlay.com (<i>Stanford</i>) |
| Neelesh Soni, Gaurav Raj | B.Tech, Batch of 2012 | Co-founder/CEO of Piktora Imaging and Rhapsody Labs |
| Rohit Manglik | B.Tech, Batch of 2012 | Founder, EduGorilla Platform |
| Smrithi Ranjan Parida | B.Tech, Batch of 2007 | COO, NestAway |
| Shreyas Tonse | B.Tech, Batch of 2006 | CEO, Zwayam Digital |
| Srinivasan Narayanan, Smrithi Ranjan Parida | B.Tech, Batch of 2005 | Co-founders, CohortPlus |

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

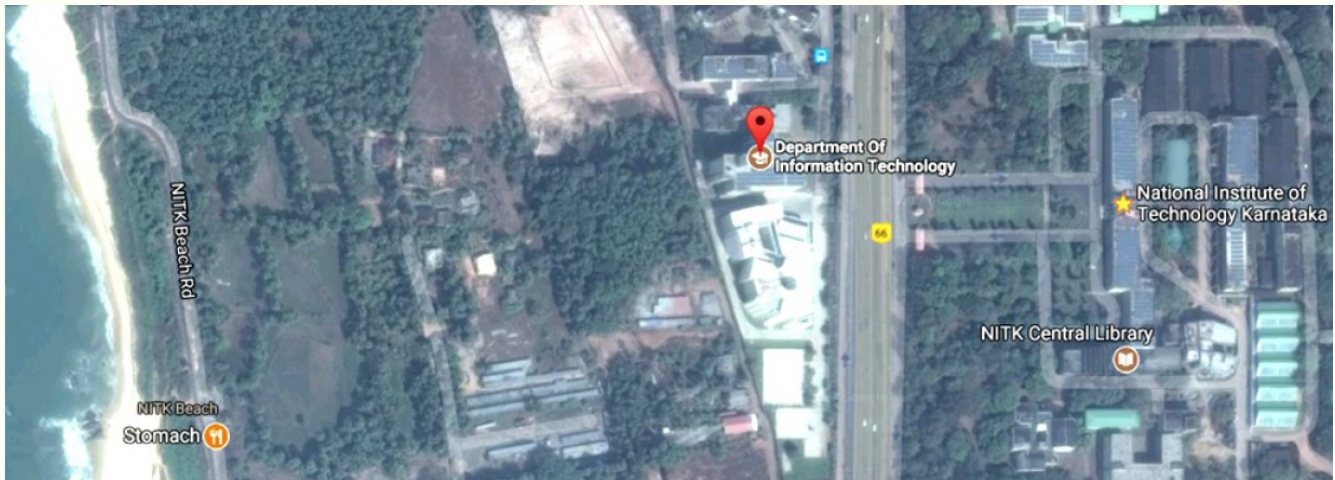
The Department Conference Room is equipped with LCD projector and teleconferencing facilities and is located on the 4th floor. It is used for conducting presentations, teleconferences, webinars etc.

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 –

- 2 Rack Mount Servers with 2 NVIDIA TESLA P40 GPUs
- 2 Dell Power Edge R730 XD2U Rack Mount Server with 2 NVIDIA TESLA M40 GPUs
- 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, 1 Lenovo and 11 HP Workstations
- 2 CUDA based server for High Performance computing
- 181 high-end Desktop systems with i7 processor (8GB RAM) and 15 systems with 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/Environment Monitoring Sensors, VR based head Mounted Devices, Google Glass, Oculus Rift, Eye Tracker, Firebird Robotic Kit, Nintendo Wii 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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