

**SPECIAL  
POINTS OF IN-  
TEREST:**

- Projects undertaken by various SIGs
- Our contribution to the betterment of the society
- What one looks for in an ideal professional technical club

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## About NITK IEEE

NITK IEEE is one of the most active student branches in the Bangalore Section, Region 10 of IEEE. The branch has proven its extraordinary engineering potential at regional, national as well as at the international level over the years.

Every year our goal is to progress and carry forward the legacy of the branch and fill in the shortcomings.

NITK IEEE conducts various activities throughout the year to keep alive the motto of IEEE— Advance technology for humanity.



The activities of NITK IEEE may be divided into the following :

- Technical Events and Competitions
- Technical Seminars and Lectures
- Technical Workshops and Seminars
- Engineering Projects In Community Services (EPIC)
- Special Interest Group On Humanitarian Technology (SIGHT)
- Special Interest Groups (SIGs)

## Awards

- IEEE R10 Exemplary Student Branch Award in 2013
- Darrel Chong Student Activity Award for IEEP project undertaken by the branch
- IEEE Student Enterprise Award for the QUADCOP-TER project
- IEEE Best Student Branch Counsellor Award presented to Dr Sumam David in 2013

IEEE CONSOC  
TRAINING

DO NOT GET  
OBSOLETE

LIKE AN OLD TECHNOLOGY,

KEEP  
INNOVATING  
YOURSELF.

SUKANT RATHNAGAR

Lets go invent  
tomorrow rather  
than worrying  
about what  
happened  
yesterday  
— Steve Jobs

## SIGHT

The Special Interest Group on Humanitarian Technology (SIGHT) endeavors to promote activities which use sustainable technologies to benefit the most vulnerable sections of humanity. They serve the purpose of identification, categorization and inventory of all IEEE Humanitarian Activities.

The projects taken up under SIGHT are :

- ♦ **Nerve Fibre Repair Simulator for Training Applications** — The main purpose of this project is to provide medical students a platform to practice the complicated nerve-rejoining surgeries without the need of a patient by simulating the entire procedure.
- ♦ **Walking characteristics logging** — This uses the cost effective Kinect to provide data regarding walking patterns using skeletal joints positioning to identify disorders and analyze the effectiveness of treatment for different people.
- ♦ **Suture joint strength estimation** — Aim of the project is to test the strength of a new method of suturing developed by a group of researchers at the Wenlock Hospital done by measuring the breaking stresses of the suture in two given orientations and then subsequently comparing data.

## Technical Events

We hold events mainly to showcase the branch's technical capabilities while enlightening the freshers about the elementary concepts of engineering.

The flag ship events of NITK IEEE are :

- ♦ **Be-Tech** — Conducted during the odd semester to test technical aptitude, presentation and soft skills of the freshers exposing them to the practical aspects of engineering.
- ♦ **INSIGHT** — A forum to share their wisdom, the seniors of various branches of engineering, at Insight educate the juniors on internships, placements and projects.
- ♦ **Student Membership Drive** — Informing freshers about the objectives and benefits of IEEE which encourages them to be a student member of this prestigious consortium.
- ♦ **Coordinate** — A more advanced festival organized in the even semester by the new recruits.

## Technical Seminars and Talks

As part of the NITK IEEE Talk Series we held various talks highlights of some are:

- ♦ **Non-destructive Evaluation Techniques in Aviation Industry** — by the esteemed professor Prof Lalita Udpa from the Michigan State University, USA.
- ♦ **High Performance Computing** — by Prof Paul Albuquerque from the Department of IT, Hepia, Geneva, Switzerland.
- ♦ **Mars Orbiter Mission by ISRO** — Mr S Arunan, Project Director of the mission (ISRO).
- ♦ **Ranking, Rating and Higher Mathematics** — by Prof Vittal Rao, DESE (formerly CEDT), IISC, Bangalore.





# Special Interest Groups (SIGs)



NITK IEEE has three established Special Interest Groups which allows its members to cultivate their passion in their field of choice .

## 1. Circuits and Systems (CAS)

This SIG focuses on electronics, communication and electrical engineering. The main projects undertaken by CAS include —

- **Quadcopter** : An unmanned air vehicle propelled by 4 motors that can hover over areas.

- **Home Automation** : Aimed at developing an affordable , comprehensive and user-friendly automation system.
- **BEEPS** : Bio Exponential Edge Preserving Smoother Involves designing an efficient algorithm to determine optimal parameter for the range and space kernel of the BEEPS filter.
- **GPS Based Autonomous Robot for Imaging** : Prototyping of a robot whose destination could be controlled by means of GPS and GSM for navigation and communication.

- **Smart Grid** : Involves load prediction using machine learning techniques and selection of sources of energy to feed the predicted load .

## 2. Computer Society (Python)

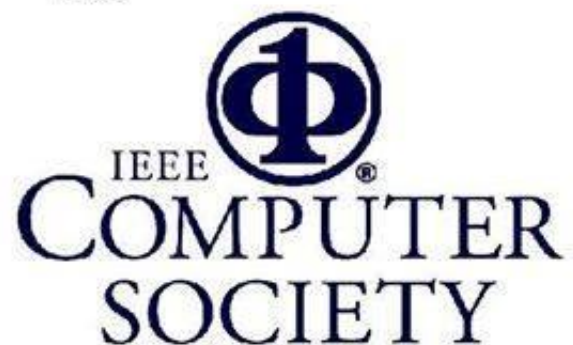
This SIG caters to those interested in computer engineering and their main projects include -

- **Algorithmic approaching to strategic cell tower placement** : Involves finding an effective algorithm to locate the

position at which the cell tower must be placed to cover maximum area efficiently .

- **Open Collaborative Learning** : Development of an online learning platform to collect data and perform research in learning analytics .
- **Project Jagriti** : Involved making a site to report any child abuse case or child rights' violations which would be then acted upon by suitable authorities .
- **Online Programming Tool** : Creation of tools that facilitate teaching

software engineering in a collaborative environment .



## 3. Piston

This SIG is dedicated to the engineering applications of Mechanics , Energy , Civil and Material Sciences . Their main projects include -

- **The Bone-Tie Project** : Involves testing the strength of the bone-tie method of holding fractured bones intact under a Universal Testing Machine.
- **Bike Simulator** : Analyses the dynamic handling of motorbikes through the use of simulation tools and mathematical tech-

niques, in order to have a better understanding of stability conditions.

- **Nanoparticles** : Synthesizes and analyses size and shape specific nanoparticles from waste biomass with the aid of chemical techniques and opti-

mizes the experimental conditions for maximum yield.

- **Catalysis** : Devises a method of production of valuable, high-yield biofuel from non-edible biomass, following a thorough techno-economic assessment of the same. Techniques for improvement of the yield shall hence be proposed.

