# ABOUT GRIET

Gokaraju Rangaraju Institute of Engineering and Technology (GRIET) is a premier autonomous institute committed to imparting quality engineering education. The Electronics & Communication Engineering (ECE) department at GRIET makes continuous efforts to teach real 'engineering' by focusing on hands-on practice in designing, developing and demonstrating projects and products in new and emerging technologies.
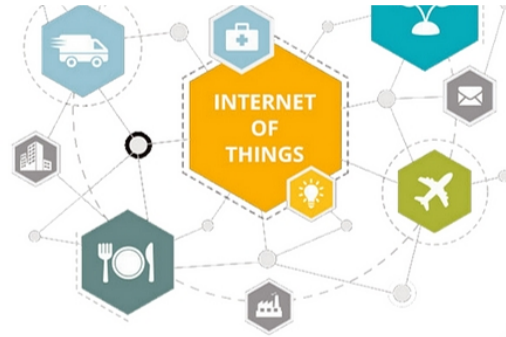
IoT and Machine Learning

IoT (Internet of Things) where 'things'– devices, appliances, actuators get connected to the Internet and update their status or read commands to change their status is a fast-growing network. Multiple technologies are involved in the IoT eco-system: embedded systems, networking, Internet technologies and the workshop aims to provide an introduction to these underlying technologies that make IoT possible. The workshop adopts the case study approach to help participants grasp the basics. The Internet Fridge, where the humble, ubiquitous fridge is used as an example of an IoT device. Leaf nodes sense physical parameters such as voltage, current, temperature as well as capture images at periodic intervals and transfer the data to the Internet. A custom GRIET board and a Raspberry Pi with camera are used as leaf nodes.

IoT devices generate huge amounts of data that needs to be stored, tracked and analyzed to make it 'actionable'. Machine Learning is the science of making computers act without programming them. They learn from the data fed to them. Since they are based on data-driven models, machine learning is a good fit to make sense of the data that is generated by IoT. Open CV is a popular platform for Machine Learning, especially for image processing. The workshop aims to introduce Machine Learning concepts using the Open CV platform. The case study based approach will help the participants understand the complete working of the IoT eco-system from sensing data to posting it to the Internet as well using that data to make Machine Learning models 'learn' and provide useful outputs.
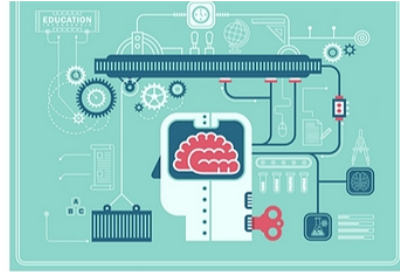
Case study based workshop on

IoT And MACHINE LEARNING

Feb 1-3, 2018

By ECE Department
GRIET

DAY-1

COE at ECE,GRIET

- Introduction to IoT &Machine Learning
- GRIET IoT Board-Features, Interfaces and Programming
- Raspberry Pi for beginners-Features, setting up and programming
- Introduction to Internet Fridge –Case Study

DAY-2

Dhananjay V. Gadre, ECE Dept.NSIT, New Delhi
Director, TI Centre for Embedded Product Design

- Introduction to IoT
- IoT System Design - Guidelines
- IoT LeafNode: Sensors, Micros, Networking, Power supplies
- IoT Framework
- Internet Fridge – Case Study

DAY-3

Mahesh U. Patil, CDAC, Hyderabad

- Introduction to Machine Learning(ML)
- Supervised & Unsupervised Learning
- Overview: Python & ML library modules
- Basics of Open CV
- Hands-on case studies based on ML
- Internet Fridge – Case Study with camera data

Timings:-10 AM-4 PM

ELIGIBILITY
Faculty from any stream

REGISTRATION
Registration Fee- 1500/-
Confirm registration on or before 30th Jan 2018

ADVISORY COMMITTEE
Dr T. Jagannadha Swamy
Prof. A. Radhanand
Prof. K.N.B Kumar

ORGANISING COMMITTEE
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