



SIX DAYS HANDS-ON FDP

On

LoRaWAN based IoT and Image/ Video Analytics using Deep Learning

March 3 - 8 2020

Organized by

School of Information Technology & Engineering,
VIT, Vellore - 632 014



ABOUT VIT

VIT was founded in 1984 as Vellore Engineering College by the Chancellor G. Viswanathan. From its humble beginning, the institution has grown exponentially to that of having more than 33,000 students. Students from all the states of India and from more than 50 countries are studying at VIT. University status was conferred in 2001 by MHRD Govt. of India in recognition of its excellence in academics, research and extracurricular initiatives. Currently, VIT has 4 campuses in Vellore, Chennai, Amaravati (AP) and Bhopal (MP). The National Institutional Ranking Framework (NIRF) of the MHRD, Government of India, has identified VIT as the best Private Engineering Institution in India in the year 2016, 2017, 2018 and 2019. VIT has been awarded as No.1 Private Institution for Innovation (ARIIA 2019 Award) by Govt. of India. VIT has gone for accreditation by NAAC [India], IET [UK], and ABET [USA] and follows world class academic processes. VIT is the first and only University in India to get 4-star rating from QS, the world universities ranking organization. Govt. of India recognizes VIT as an Institute of Eminence (IoE) in 2019 to become the world's best.

ABOUT SITE

The School offers programmes related to Information Technology, Software Engineering, Computer Applications and Domain Specific Applications. It imparts the knowledge and skills required for the students to become competent and excel in the broader domain of Information Technology and allied disciplines. The students are encouraged to work on challenging projects and given exposure to industry - Oriented practices.

The School focus is on holistic learning to help the students to make significant contributions to the Information Technology industry and to serve the society at large. The school has more than 4,800 students and 180 committed faculty members, apart from many visiting professors, working professionals from the industry and R&D organizations. The faculty members are highly motivated to do ground-breaking research and excel in teaching and learning processes. They provide opportunities for the students to apply the acquired knowledge for solving real-world problems and gaining

undergraduate research experience. The placement record of the School is always impressive.

The School always strives to keep its curricula updated with the recent technological advancements and best practices of the IT industry. The School has State-of-the-art infrastructure for teaching-learning, research and consultancy. The School has strong linkages with leading IT companies and research organizations. It has many industry-supported Laboratories and Centres of Excellence. Postgraduate and Research Programmes of the School provides ample opportunities for the students to explore emerging technologies and do result-oriented research.

ABOUT FDP

Modern ITs have led to fast growth of large data collections. As growth of unstructured data increases, analysing the data to discover useful knowledge is becoming an important task today in many occasions. The Main focus of this FDP is to explore state of the art Technologies such as LoRa architecture, image/video analytics and its applications to the Research scholars, Academicians and Industry Professionals. The highlight of the FDP is to train the

participants and develop the prototype through the technologies learned in FDP.

RESOURCE PERSONS

Experts from Industry and Academia.

TECHNOLOGIES TO BE COVERED

LoRa

Currently, there is a lot of development in Low Power Wide Area Networks (LPWAN). LoRa is such wireless technology that offers long range and secure data transmission for Machine- to-Machine and IoT applications. It specifically deals with low power consumption at a low bit rate due to its LoRaWAN-based system architecture. The protocol and its network architecture have a great influence in determining a node battery lifetime, network capacity, quality of service (QoS), security, and a variety of applications served by the network.

Image/Video Analytics

The need to analyse data and proactively prescribe actions is pervasive in nearly every vibrant growth of industry, government and institutional sector. This has created a vacuum, or demand, for prescriptive analytics systems. Is all the surveillances

coupled with the potential of video/image analytics helping? In the end, surveillance and image analytics does give provide data that can help officials pursue criminal activity and pursue justice. Also, people expect the nation's defense and security effort to be cost-effective. Simply put, this means more image and video capture or surveillance everywhere.

TARGET GROUP INCLUDES

Research Scholars, Academicians & Industry Professionals.

PATRON

Dr. G. Viswanathan, Chancellor

CO-PATRONS

**Mr. Sankar Viswanathan,
Vice-President**

**Ms. Kadhambari S. Viswanathan,
Assistant Vice-President**

**Dr. Anand A Samuel,
Vice-Chancellor**

**Dr. S. Narayanan,
Pro-Vice Chancellor**

CONVENER

Dr. B K Tripathy,
Dean & Senior Professor,
School of Information Technology and
Engineering (SITE),
VIT, Vellore.

ORGANIZING SECRETARY

Dr. Agilandeewari L
Associate Professor & Head,
Department of Digital Communications,
SITE, VIT Vellore.

FDP COORDINATORS

- 1. Dr. Prabukumar M**
Associate Professor,
Department of Software and Systems
Engineering, SITE, VIT, Vellore.
- 2. Dr. Chiranjil Lal Chowdhury**
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- 3. Prof. Kumaresan P**
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- 4. Dr. Brindha K**
Associate Professor,
Department of Smart Computing, SITE,
VIT, Vellore.

5. Dr. Sudha S

Associate Professor,
Department of Digital Communications,
SITE, VIT, Vellore.

REGISTRATION FEE

Internal Participants: INR 2000/-

External Participants: INR 3000/-

*(Accommodation for External participants can
be provided on payment basis)*

Last Date for Registration: 2nd March 2020

The total number of participants is restricted to
50 on First Come First Serve Basis

**Note: In addition to FDP Certificate for 6 Days,
LoRaWAN Completion Certificate will be issued
by Enthu Technology Solutions India Pvt Ltd.**

**Venue: SJT G07, Silver Jubilee Tower,
VIT, Vellore**

DATE & TIME:

MARCH 3-8, 2020, 9.30 AM - 5.00 PM

For Online Registration and Payment:

<http://info.vit.ac.in/Events-VIT/LoRaWAN/apply.asp>

For further clarifications contact

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SESSION DETAILS

Day 1 (03-03-20) - LoRaWAN

Introduction to IoT, LoRa modules,
LoRaWAN Integration with Arduino.

Day 2 (04-03-20) – Hands-on

ABP Mode, OTTA Mode & LMIC
Library.

Day 3 (05-03-20) – Hands-on

DIY – Single Frequency, Multiple
Frequency, SMS/ Email/ Call Alert for
Emergency Notification System.

Day 4 (06-03-20) – Image Analytics

Image Analytics Basics, Neural Network
and Deep Neural Network.

Day 5 (07-03-20) – Video Analytics

Video Analytics and its Demonstrations

Day 6 (08-03-20) – Case Studies

Thermal Imaging, Multi/Hyper spectral
imaging, Object Detection, Video
Tracking and Research Directions.