



Online FDP on Probabilistic ML/DL for Engineering & Business

21st – 25th July 2025



Chairman, EICT Academy & Director MNIT Jaipur

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Objective (Electronics & ICT Academy-Phase II)

1) To conduct specialized FDPs for faculty/mentor training in line with the vision of MeitY by promoting emerging areas of technology and other high-priority areas that are pillars of both the "Make in India" and the "Digital India" programs.

2) To promote synergy and collaboration with industry, academia, universities and other institutions of learning, especially in emerging technology areas.

3) To support the National Policy on Electronics 2019 (NPE 2019) which envisions positioning India as a global hub for ESDM sector, including MeitY Schemes/policies such as Programme for Semiconductors and Display Fab Ecosystem; India AI; National Programme on AI, Production Linked Incentive Scheme for IT Hardware & Large-Scale Electronics Manufacturing; EMC; SPECS; Chips to System (C2S); etc.

4) To promote standardization of FDPs through Joint Faculty Development Programmes.

5) To support the vision of the National Education Policy (NEP 2020), which mandates that Indian educators go through at least 50 hours in professional development programmes per year.

6) To design, develop & deliver specialised FDPs on emerging technologies/ niche areas/ specialised modules for specific research areas for Faculty in Higher Education Institutions (HEI), besides FDPs on multi-disciplinary areas connected with ICT tools and technologies and other digital hybrid domains, covering a wide spectrum of engineering and non-engineering colleges, polytechnics, ITIs, and PGT educators.

An intensive 40 Hour Faculty Development Programme in Online mode is being organized for faculty of engineering and technological and business institutions. It is also open to persons from industry and doctoral students of Indian organizations. The main theme of training program will be oriented around exploring the state of the art methods for Probabilistic approaches of Machine Learning and Deep Learning along with the hands on coding from scratch using Python. The program will run from 21st – 25th July 2025 for 5 days.

Experts/Speakers-

1) Prof. Souvik Chakraborty, Dept. of Applied Mechanics, IIT Delhi

2) Prof. Rajesh Kumar, Dept. of Electrical Engg., MNIT Jaipur & Professor of Artificial Intelligence, Faculty of Life Sciences, University of Johannesburg, South Africa

3) Prof. Gunjan Soni, Dept of Mechanical Engg., MNIT Jaipur

4) Prof. Sandipan Karmakar, Dept. of Management Studies, MNIT Jaipur

Program Modules:

Day 1: Intro to ProbMLDL & Review: Stats & Probability, Review of Different Distributions, Transformation of Distributions, Intro to Bayesian Analysis, MLE, MAP, Prior Posterior relationship in depth, Prior Modeling – Conjugate, Noninformative, Hierarchical and Empirical Bayes, Python implementation of Bayesian Analysis of Coin Tossing experiment

Day 2: Bayesian Simulation: Sampling for Posterior Simulation - Rejection & Importance Sampling, Stochastic Approximation – markov Chain, MCMC – Metropolis, Metropolis-Hastings and Gibbs Sampling, Linear Regression, Logistic Regression, Python Implementation

Day 3: Bayesian Simulation and ML : Direction based Stochastic Approximation – Hamiltonian Monte Carlo, Deterministic Approximation – Variational Inference & Mean Field Approximation, Linear & Logistic Regression Revisited, Python Implementation

Day 4: Bayesian ML : Linear & Logistic Regression with Sparsity, Gaussian Processes, Latent Variable Models (LVM), Probabilistic PCA, Gaussian Processes with LVM, Python Implementation

Day 5: Bayesian DL : Quick Review of frequentist DL, Probabilistic DL, Bayesian Neural Networks, Dropout as Approximate Bayesian Inference, Flow and Diffusion based Models, Deep Gaussian Processes, Some Applications, Python Implementations

Programme Coordinator:

Dr. Sandipan Karmakar
(Principal Coordinator)

Dr. Ayush Gautam (Joint
Coordinator)

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Registration: Register online at - <http://www.mnit.ac.in/eict/>

Registration is open to faculty, industry persons, doctoral, postgraduate and graduate students. Participants will be admitted on first-come first-served basis.

Mode of programme	Academia (faculty/Students): India/SAARC/Africa	Others: India/SAARC/Africa	Rest of the world
Online	Rs. 500/-	Rs. 1500/-	US \$ 60/-

Registration fee: (A) Fee once paid will not be refunded back.

(B) The fee covers online participation in the programme tutorial notes and examination, certification charges.

(C) The organizers should receive the registration amount through online payment gateway provided at the registration portal.

(D) For modules details, see separate sheet attached.

→ For any other query, email us at fdp.academy@mnit.ac.in