PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement facilitated by the Institute of Smart Structures and Systems

Theory of Generative Models

PMRF-ISSS042/III/2025

Name of the PMRF student

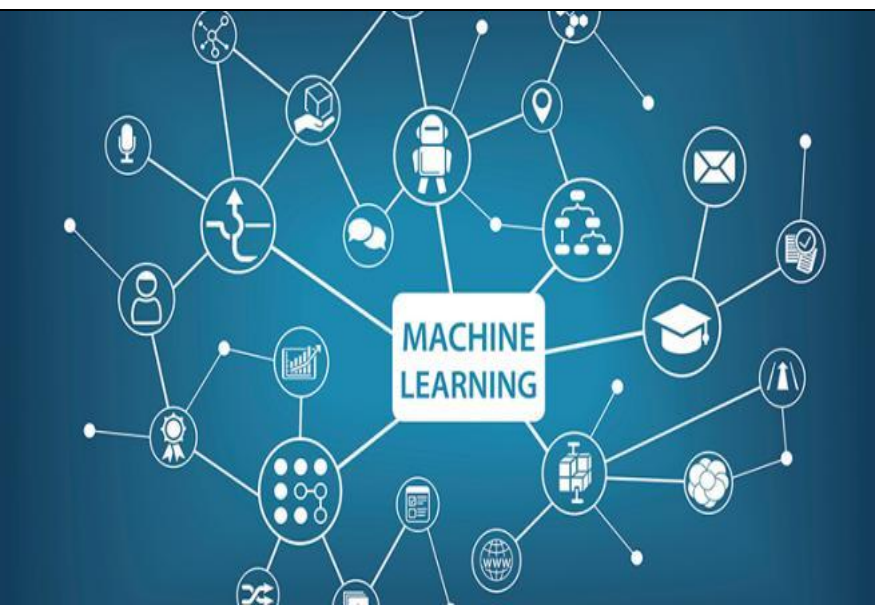
Alokendu Mazumder

Required background of the students taught

BE/BTech/ME/MTech in any discipline
Pre-requisite: Basic Calculus and Probability

Online session coordinator

Will be chosen from the list of registrants



Details of the content of the module

Week 1: Introduction to statistical divergences

Surprisal of an event, entropy, cross entropy, KL-Divergence, f-Divergences

Week 2: Parametric Density Estimation

Maximum likelihood estimate, Gaussian mixture models, Laplacian mixture models, EM algorithm & K-Means clustering

Week 3: Non-Parametric Density Estimate

Parzen Window, KNN Estimate, Kernel Density Estimate

Week 4: Deep generative models

GANs, VAEs and Diffusion models.

Schedule of the module

Monday & Friday – 1800 hrs – 2030 hrs

Duration: 24th April 2025 – 10th May 2025

Registration Link : https://docs.google.com/forms/d/e/1FAIpQLSfKFnh25n_X1x9_qP63MKhbskwEISXMQj2W-Z7lNVQ_ZvV8SA/viewform?usp=dialog

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link: