



**Theoretical Statistics and Mathematics Unit, Kolkata
INDIAN STATISTICAL INSTITUTE**

Thesis Pre-Submission Seminar

Date: June 20, 2025
Time: 04:00 PM

VENUE:

L- Infinity

(5th Floor, A.N. Kolmogorov Bhavan), ISI Kolkata

TITLE:

**Statistical Guarantees of Deep Generative Models Involving
Diverse Spaces: Generation Consistency and Robustness**

SPEAKER:

Anish Chakrabarty

Stat-Math Unit, ISI Kolkata

ABSTRACT:

In this talk, we are going to discuss the statistical properties of deep generative models that, based on their architecture, involve data spaces of unlike geometry, e.g., Wasserstein Autoencoders and Cycle-consistent GANs. We characterize a sufficient property of transformations to achieve generation consistency that, in turn, helps us in prescribing practical neural architectures. We also discuss their inherent denoising capacity in the presence of outliers in image signals. Finally, we propose robustness formulations to the Gromov-Wasserstein distance, which points to a general framework to mitigate perturbations in generated samples from the earlier models.

ALL ARE CORDIALLY INVITED