ICTS - OT/ML/PDE Seminar Series (Online)

Title	:	Wasserstein Gradient Flows and Generative Models for Posterior Sampling in Inverse Problems
Speaker	:	Gabriele Steidl (Technische Universität, Berlin)
Date	:	Tuesday, 28th May 2024
Time	:	11:30 AM (IST)

Abstract : This talk is concerned with inverse problems in imaging from a Bayesian point of view, i.e. we want to sample from the posterior given noisy measurement. We tackle the problem by studying gradient flows of particles in high dimensions. More precisely, we analyze Wasserstein gradient flows of maximum mean discrepancies defined with respect to different kernels, including non-smooth ones. In high dimensions, we propose efficient flow computation via Radon transform (slicing) and subsequent sorting. Special attention is paid to non-smooth Riesz kernels in which Wasserstein gradient flows have a rich structure. Finally, we approximate our particle flows by conditional generative neural networks and apply them for conditional image generation and in inverse image restoration problems like computerized tomography.

Venue	:	Online

Zoom link: https://us02web.zoom.us/j/81379290349
Meeting ID: 813 7929 0349