

Stochastic Optimization & Machine Learning Applications

Dr. Tanushree Pandit's research focuses on **stochastic optimization methods** and their applications in **machine learning, decision-making, and data-driven modeling**. Her work involves developing mathematical techniques and algorithms that incorporate randomness or uncertainty into the optimization process, which is essential when dealing with noisy, incomplete, or unpredictable data common in real-world scenarios.

By studying and improving stochastic optimization algorithms, she aims to make them more efficient, stable, and reliable for solving large-scale and complex problems. These methods are widely used in **training machine learning models, operations research, financial mathematics, and engineering design**, where finding optimal solutions under uncertainty is critical.

Through her research, Dr. Pandit contributes to both the theoretical development and the practical application of optimization techniques, ensuring they remain robust and effective in the face of variability and complexity inherent in modern data and systems.