

Data Science Seminar Series
In Collaboration with
The Department of Data Science

Efficient and Practical Deep Generative Models: From Theory to Application

Hosted by Shuai Zhang & Hai Phan

Huan He

Postdoc Researcher from the University of Pennsylvania

Date: Thursday, February 15th, 2024
Time: 2:30 PM- 3:30 PM (Coffee served at 2:15 PM)
Location: GITC Building Room 4402 (4th floor Seminar Room)
Web Link: [Zoom Meeting Link](#)

In the rapidly evolving world of machine learning (ML), the task of training large-scale Deep Generative Models (DGMs) in an efficient, and reliable manner presents a notable challenge. This presentation emphasizes the crucial role of mathematical foundations in enhancing DGM practices. We begin by examining the core principles of DGMs, highlighting how nonlinear acceleration contributes to increased computational efficiency and faster convergence. The talk also delves into the application of advanced optimal transport methods in training real-world DGMs. These methods not only improve the quality of generation but also adapt effectively to scenarios with missing data. Furthermore, the presentation will explore the current ambitions in the field of generative models, especially their application in the development of healthcare digital twins through causal inference. This section aims to illustrate the potential of DGMs in healthcare, focusing on their ability to foster more personalized and efficient treatment approaches.

Huan He is a postdoctoral researcher at the University of Pennsylvania, specializing in machine learning and health informatics. Huan's work focuses on creating innovative technologies that bridge machine learning with healthcare. Before that, he was a postdoctoral researcher at Harvard (BMI@Harvard) in 2022-2023. Huan He received his Ph.D. degree from Emory University, where he developed accelerated algorithms for analyzing high-dimensional data and large machine-learning models. Huan's commitment to advancing this field is evident in his contributions to top-tier conferences and journals, including ICML, ICLR, NeurIPS, SIMAX, and SISC.