

School of Computer and Information Sciences

hosts

“A Dive into Generative Deep Learning”

by

Dr. Mohammed J. Zaki

**Professor & Dept. Head of Computer Science,
Rensselaer Polytechnic Institute, New York, USA.**



About the event: In this series of talks the speaker will focus on the latest developments in generative models for text and images. The aim will be to cover some of the technical building blocks for models like ChatGPT and Stable Diffusion that have seen tremendous recent interest. The speaker will discuss transformers and attention, with methods like BERT, GPT, ViT, and so on. He will lay the foundations for variational autoencoders, and diffusion models. The speaker will also touch upon the practice with some examples in Pytorch.

Schedule

(5th July 2023)

- **(9: 45 AM - 10:00 AM) Inaugural**
- **(10:00 AM - 11:30 AM) Transformers and Attention:** Fundamentals of attention and recent advances for text and vision
- **(11:30AM - 11:45AM) Tea Break**
- **(11:45 AM - 1:15 PM) Large Language Models:** BERT and GPT, and recent methods like ChatGPT

Lunch Break

- **(2:30 PM - 4:30 PM) Autoencoders and Diffusion:** Variational autoencoders and stable diffusion for images
- **(4:30 PM - 5:00 PM) Interaction with faculty and students over a High Tea**

Venue

**Seminar Hall(EB208), First Floor,
New Building, SCIS, UoH.**

About the Speaker

Bio: Mohammed J. Zaki is a Professor and Department Head of Computer Science at RPI. He received his Ph.D. degree in computer science from the University of Rochester in 1998. His research interests focus on novel data mining and machine learning techniques, particularly for learning from graph-structured and textual data, with applications in bioinformatics, personal health, and financial analytics. He has over 300 publications (and 6 patents), including the Data Mining and Machine Learning textbook (2nd Edition, Cambridge University Press, 2020). He has served as program co-chair for all major conferences in data mining, and as area chair and senior PC for all the major conferences in AI and machine learning (including ICML, AAAI, and SIGKDD). He is currently serving on the Board of Directors for ACM SIGKDD. He received the National Science Foundation CAREER Award and the Department of Energy Early Career Principal Investigator Award. He is a Fellow of the IEEE, a Fellow of the ACM, and a Fellow of the AAAS.

*****All are invited*****