

Saw Swee Hock Public Lecture

FROM LEARNING, TO META-LEARNING, TO "LEGO-LEARNING" - THEORY, SYSTEM, AND APPLICATIONS



by **Professor Eric P. Xing**

*President at Mohamed bin Zayed University of AI,
Professor of Computer Science,
Carnegie Mellon University*

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2:30pm - 3:30pm

By Zoom: <https://hku.zoom.us/j/93002553505>
Meeting ID: 930 0255 3505

About the Talk

Software systems for complex tasks - such as controlling manufacturing processes in real-time; or writing radiological case reports within a clinical workflow - are becoming increasingly sophisticated and consist of a large number of data, model, algorithm, and system elements and modules. Traditional benchmark/leaderboard-driven bespoke approaches in the Machine Learning community are not suited to meet the highly demanding industrial standards beyond algorithmic performance, such as cost-effectiveness, safety, scalability, and automatability, typically expected in production systems. In this talk, I discuss some technical issues toward addressing these challenges: 1) a theoretical framework for trustworthy and panoramic learning with all experiences; 2) optimization methods to best the effort for learning under such a principled framework; 3) compositional strategies for building production-grade ML programs from standard parts. I will present our recent work toward developing a standard model for **Learning** that unifies different machine learning paradigms and algorithms, then a principled way for **Meta Learning** in the space of hyperparameters, model architectures, and system configurations, and finally principles and designs of standardized software **Legos** that facilitate cost-effective building, training, and tuning of practical ML pipelines and systems.

About the Speaker

Eric P. Xing is President at Mohamed bin Zayed University of AI, Professor of Computer Science at Carnegie Mellon University, and the Founder and Chairman of Petuum Inc. He holds a PhD in Molecular Biology and Biochemistry from Rutgers University, and a PhD in Computer Science from University of California, Berkeley. His main research interests are the development of machine learning and statistical methodology, and large-scale computational system and architecture. He is a recipient of the NSF Career Award, the Alfred P. Sloan Research Fellowship in Computer Science, the US Air Force Office of Scientific Research Young Investigator Award, the IBM Open Collaborative Research Faculty Award, and the Carnegie Science Award. Prof Xing is a board member of the International Machine Learning Society; he has served as the Program Chair (2014) and General Chair (2019) of ICML; he is also the Associate Department Head of the Machine Learning Department, founding director of the Center for Machine Learning and Health at Carnegie Mellon University; he is a Fellow of the AAI and IEEE.



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All interested are welcome

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