

DEPARTMENT OF COMPUTER SCIENCE

SEMINAR

2025 SERIES

Meta-Learning Meets Continual Learning: Towards Autonomous and Continuous Learning Systems

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ONLINE VIA ZOOM



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ABSTRACT

In an era characterized by rapid and unpredictable changes, the static nature of traditionally trained machine learning models presents significant limitations in adapting to new information. This necessitates the development of models that can evolve and adapt over time. In this talk, I will explore strategies that enable machine learning models to autonomously and continuously acquire and integrate new knowledge in dynamic environments. The talk will begin with an overview of meta-learning, a paradigm that facilitates rapid adaptation through the concept of "learning to learn," with its successful applications. I will then delve into the issue of meta-overfitting, a common challenge in meta-learning where models fail to generalize to new tasks. Following this, I will present our approaches to mitigate this problem through task augmentation. Building on this foundation, I will introduce our latest works on the Meta Continual Learning framework. This integrative framework combines the rapid adaptation capabilities of meta-learning with the lifelong learning capacities of continual learning systems. These advancements represent a significant step toward developing truly autonomous learning systems that can operate effectively in dynamic, real-world environments.



**SPEAKER'S
BIOGRAPHY**



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