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SEMINAR 2026 SERIES

MANAGING DISTRIBUTED KNOWLEDGE FOR REAL-WORLD AI SYSTEMS

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DATE & TIME
8 JUL 2026 (WED)
10:30 - 11:30 AM

VENUE
JC3_UG06, Tin Ka Ping Global Conference Classroom, Jockey Club Campus of Creativity

ABSTRACT

Modern AI systems are increasingly built on knowledge that is distributed, heterogeneous, and continuously evolving. From a data management perspective, this creates a life-cycle problem: knowledge must be learned from distributed data, updated when data change, removed when data should be forgotten, and reused across independently developed models. In this talk, I will present my research on managing distributed knowledge for real-world AI systems. The first part focuses on distributed data as knowledge sources: how to learn from private, feature-heterogeneous, and fuzzily linked data without centralizing raw records, and how to perform the reverse operation—unlearning from trained models—so that the influence of deleted records can be efficiently removed without full retraining. These works connect federated learning, record linkage, benchmarking, and machine unlearning as a unified knowledge life cycle between data and models. The second part focuses on models as another form of knowledge silo. As organizations increasingly own specialized, closed, and heterogeneous models, future AI systems need mechanisms to identify, organize, and reuse model knowledge. I will discuss my work on functional model representations and model-based LLM customization for managing such model silos. I will conclude with a future research agenda on healthcare AI, where distributed personal signals, clinical knowledge, and human-in-the-loop deployment provide a concrete setting for managing knowledge across data, models, and real-world decisions.

SPEAKER'S BIOGRAPHY

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