Title: Towards Hybrid Graphs: Unifying Property Graphs and Time Series

Speaker: Shubhangi Agarwal

Date: 5th June

Time: 4:15pm

Venue: KD101

Abstract:

Modern data-intensive applications increasingly require joint modeling of interconnected entities and their temporal evolution. Graphs have emerged as a powerful abstraction for capturing complex relationships, while time-series and data streams effectively represent evolving values. However, current data systems treat these models separately, forcing analysts to manually bridge the gap between structural and temporal data. This disconnect limits analytical capabilities and obstructs seamless integration. In this talk, we introduce HyGraph, a novel vision and unified data model that combines both property graphs and time-series data models to enable hybrid operations that leverage both the rich semantics of graph structures and the sequential patterns of temporal data. This talk will also highlight how HyGraph can empower evolving graph analytics and facilitate more expressive querying and reasoning by embedding time-dependent attributes directly into graph elements and supporting new transformation operators.

Biography:

Dr. Agarwal is an Independent Researcher. She obtained her PhD degree from the Dept. of Computer Science and Engineering, IIT Kanpur and was a Post-doctoral Fellow at the University of Lyon 1, France. Her research areas span graph mining, graph databases, and graph neural networks.