

Integrating Textual and Graph Data: Advancing Knowledge Discovery with Semantic and Structural Insights

Bowen Jin, Yu Zhang, Yunyi Zhang, Jiawei Han

Department of Computer Science

University of Illinois at Urbana-Champaign

May 1, 2025

Tutorial Website:



Estimated Timeline for This Tutorial

- ❑ Introduction: **3 mins (1:30 - 1:33 Bowen Jin)**
- ❑ Part I: A Retrieval and Graph Structuring Approach with Large Language Models: **39 mins (1:33 - 2:12 Prof. Jiawei Han)**
- ❑ Part II: Improve Large Language Models for Search/Graph-Augmented Scenarios: **39 mins (2:12 – 2:51 Bowen Jin)**
- ❑ Part III: Domain-specific Applications: **39 mins (2:51 - 3:30 Prof. Yu Zhang)**

About Instructors



- ❑ Bowen Jin
- ❑ Ph.D. Candidate @ UIUC
- ❑ Apple PhD Fellowship (2024)



- ❑ Yu Zhang
- ❑ Assistant Professor @ TAMU
- ❑ Dissertation Completion Fellowship (2023)
- ❑ Yunni and Maxine Pao Memorial Fellowship (2022)

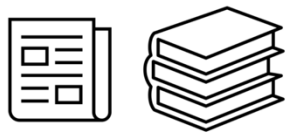


- ❑ Yunyi Zhang
- ❑ Ph.D. Candidate @ UIUC

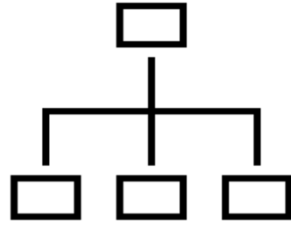


- ❑ Jiawei Han
- ❑ Michael Aiken Chair Professor @ UIUC
- ❑ ACM SIGKDD Innovation Award Winner (2024)

Our Roadmap of This Tutorial

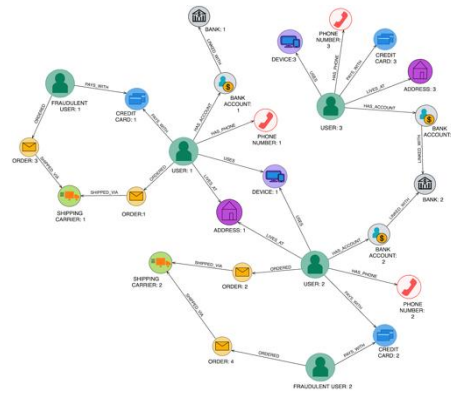


Unstructured
massive text data:
papers, news, ...



Structured graphs

**Part I: A Retrieval and Graph Structuring Approach
with Large Language Models (Inference Stage)**



**Part II: Improve Large Language Models for
Search/Graph-Augmented Scenarios (Training Stage)**



**Part III: Domain-specific
Applications**