Hao Chen

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Education

Beijing Normal University — Beijing, China
M.S. in System Science, GPA: 3.6/4.0 — Sep 2021–Current

Beijing University of Posts and Telecommunications — Beijing, China
B.S. in Applied Physics, GPA: 3.5/4.0 — Sep 2017–June 2021

- Beijing Outstanding Graduates

Expereience

LinkedIn China & Microsoft Research Asia Alumni — Feb 2022 - May 2023
Machine Learning Engineer Intern — Spark, GNNs, PyG

- Explored LinkedIn's job recommendation strategy using graph-based methods. Key contributions include:
  - Managed and analyzed enterprise-level data using Spark to uncover the significant influence of professional connections on job applications.
  - Proposed a two-stage GNN-based method, significantly leveraging professional networks for job recommendations.
  - Authored a paper as the first author, which was accepted by WSDM 2024.
- Supported colleagues in their research on job recommendations. Key contributions include:
  - Actively involved in experiment design and execution.
  - Provided proofreading and constructive feedback for their work.
  - Contributed to a paper, currently under review for ICASSP 2024, as the fourth author.

Beijing Normal University — April 2023 - Current
Knowledge Graph Construction, PyPi, Neo4j, LLMs

- Developed an LLM-powered system for Knowledge Graph Construction. Key contributions include:
  - Enhanced knowledge extraction by generating entity descriptions using LLMs and used semantic similarity between descriptions to improve entity alignment.
  - Optimized data storage with a dual-database approach, utilizing Neo4j for graph structures and Chroma for efficient semantic-based similarity calculations.
  - Released proposed model as a python package, **DescKGC**, on PyPi.

Microsoft Research Asia Alumni — May 2023 - Current
Research Intern — LLMs, HINs, Neo4j, KBQA

- Evaluated LLMs' Graph Mining ability. Key contributions include:
  - Led the creation of **HINQA**, a unique KBQA dataset targeting information networks like social and citation systems, as opposed to traditional factual querying.
  - Recognized LLM limitations in generating up-to-date query languages for evolving graph mining algorithms; proposed a graph mining API intermediary representation to enhance LLM's invocation capacity.
  - Aimed to democratize graph algorithm access for non-technical users via natural language, ensuring data quality and compliance evaluation.
  - Planned to summit to NAACL 2024

Publications

- **Hao Chen**, Lun Du, Yuxuan Lu, Qiang Fu, Xu Chen, Shi Han, Yanbin Kang, Guangming Lu, and Zi Li, "Professional Network Matters: Connections Empower Person-Job Fit", *The 17th ACM International Conference on Web Search and Data Mining (WSDM), 2024*.
- Yihan Cao, Xu Chen, Lun Du, **Hao Chen**, Qiang Fu, Shi Han, Yushu Du, Yanbin Kang, Guangming Lu, Zi Li, "TAROT: A Hierarchical Framework with Multitask Co-Pretraining on Semi-Structured Data towards Effective Person-Job Fit", under review by *ICASSP 2024*.

Projects

- Hao Chen (2023), DescKGC [Software], GitHub. https://github.com/guangchen811/DescKGC.

Scholarships and Awards

- First-Class Scholarship, Beijing Normal University 2022-2023
- First-Class Scholarship, Beijing Normal University 2021-2022

Skills

- **Programing Languages**
  - Advanced: Python, SQL, Spark, Cypher, MATLAB, LaTeX.
  - Familiar: Go, Java, C, R, Scala.
- **Machine Learning Frameworks**
  - Advanced: PyTorch, PyTorch Geometric, HuggingFace Transformers, LangChain.
  - Familiar: TensorFlow, DGL.