Junheng Hao

CONTACT INFORMATION

UCLA Computer Science, Samueli School Of Engineering
University of California, Los Angeles (UCLA)
E-mail: jhao@cs.ucla.edu
Mobile: +1 (424)355-5950

Homepage
LinkedIn
Google Scholar
Semantic Scholar

RESEARCH INTERESTS

Knowledge is power; knowledge graphs (KGs) are power to next-generation AI analytics. My research interests lie at the intersection of graph learning, data mining, natural language processing and machine learning with a focus on knowledge bases and graphs, especially learning symbolic and semantic structures inside KGs and its empowered interdisciplinary applications.

EDUCATION

University of California Los Angeles (UCLA), CA, USA — Sept 2022 *(Expected)*
Ph.D. in Computer Science
Thesis: Incorporating ontological information in knowledge graph learning and applications
Advisors: Yizhou Sun, Wei Wang

Tsinghua University, Beijing, China — May 2017
B. Eng. in School of Information Science and Technology

PROFESSIONAL EXPERIENCE (INDUSTRY)

Research Intern at Microsoft Research (MSR), Redmond, WA — June 2021 - Sept 2021
- **Mentors:** Chieh-Han Wu, Zhihong (Iris) Shen, Ye-Yi Wang, Jennifer Neville

PhD Research Intern at IBM Research AI, San Jose, CA — June 2020 - Sept 2020
- **Mentor: Mentors:** Chuan Lei, Berthold Reinwald, Fatma Ozcan

Applied Scientist Intern/Student Researcher at Amazon, Seattle, WA — June 2019 - Dec 2019
- **Mentors:** Tong Zhao, Luna Xin Dong, Christos Faloutsos

Research Intern at **NEC Lab America**, Princeton, NJ — June 2018 - Sept 2018
- **Mentors:** Lu-An Tang, Zhichun Li, Haifeng Chen

PUBLICATION SUMMARY

As of December 2021: I have accomplished 10+ Papers published papers and submissions, among which I first-authored papers published on top-tier venues (KDD, CIKM, BCB) from interdisciplinary domains across NLP, recommendation and bioinformatics. More up-to-date publication record can be found in *Google Scholar*. Several research works and internship projects (such as P-Companion [2]) have been successfully deployed in market-scale product.

SELECTED PUBLICATIONS & SUBMISSIONS

[1] *MEDTO: Medical Data to Ontology Matching using Hybrid Graph Neural Networks*
Junheng Hao, Chuan Lei, Abdul Quamar, Vasilis Efthymiou, Fatma Ozcan, Yizhou Sun, Wei Wang. Proceedings of 27th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD, Applied Data Science Track). Auguest 2021.

[2] *P-Companion: Framework for Diversified Complementary Product Recommendation*
Junheng Hao, Tong Zhao, Jin Li, Luna Xin Dong, Christos Faloutsos, Yizhou Sun, Wei Wang. Proceedings of the 29th ACM International Conference on Information and Knowledge Management (CIKM), Applied Research Track. October 2020.

[3] *Bio-JOIE: Joint Representation Learning of Biological Knowledge Bases*
Junheng Hao, Chelsea J.-T. Ju, Muhao Chen, Yizhou Sun, Carlo Zaniolo, Wei Wang. Proceedings of The 11th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB 2020), September 2020. **Best Student Paper Award**.

[4] *Universal Representation Learning of Knowledge Bases by Jointly Embedding Instances and Ontological Concepts*

Junheng Hao, Muhao Chen, Wenchao Yu, Yizhou Sun, Wei Wang. Proceedings of 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD, Research Track). August 2019.

[5] *Metadata-Induced Contrastive Learning for Zero-Shot Multi-Label Text Classification*
Yu Zhang, Zhihong Shen, Chieh-Han Wu, Boya Xie, **Junheng Hao**, Ye-Yi Wang, Kuansan Wang and Jiawei Han. Prerpint, under review.

[6] *KG-Doc: Hybrid Knowledge Graph Infused Document Representation Learning*
Junheng Hao, Chieh-Han Wu, Iris Zhihong Shen, Boya Xie, Jennifer Neville, Ye-Yi Wang, Yizhou Sun, Wei Wang. Preprint, under review.

[7] *MSGT-GNN: Multi-source Graph Knowledge Transfer*
Junheng Hao, Lu-An Tang, Yizhou Sun, Zhengzhang Chen, Haifeng Chen, Junghwan Rhee, Zhichun Li and Wei Wang. Prerpint, under review.

PATENT APPLICATIONS

[8] *OntoGNN: Hybrid Graph Neural Networks for Ontology Matching.*
Chuan Lei, **Junheng Hao**, Vasilis Efthymiou, Fatma Ozcan, Abdul Quamar. U.S. Patent Application (Sept. 2021)

ACADEMIC SERVICES

- **Conference Program Committee & Reviewer:** NeurIPS, KDD, ICML, AAAI, WWW, ICLR, IJCAI, EMNLP, ICDE, SDM, WSDM
- **Journal Reviewer:** TPAMI, TBD, TIST, TKDD
- **Conference Volunteer:** ICLR (2021), KDD (2019,2020), EMNLP (2020,2021), NeurIPS (2018, 2020)

INVITED TALKS

- Dec 2021: Coupang, Ranking, Discovery and Personalization. Invited tech talk: *Knowledge Graphs Meets Product Recommendation: One Deep Learning Solution*.
- Oct 2021: UCLA CS Data Science Seminar. *Graphs, Transformers, and When They Meet Biology (AlphaFold2)*.
- Aug 2021: Microsoft Search, Assistant and Intelligence (MSAI). Graph learning session: *Knowledge Graph with Ontology Learning and Applications*.
- July 2019: Amazon, Product Graph. Invited talk: *Representation Learning on Knowledge Graphs: Embedding, Logic Rules and Graph Neural Networks* (with Yizhou Sun).

HONORS AND AWARDS

- Best Student Paper Award (ACM BCB) 2020
- SIGIR Student Travel Grant (CIKM) 2020, 2021
- Student Travel Award (KDD) 2019, 2020
- UCLA Graduate Division Fellowship 2018-2019

TEACHING

- CSM146: Introduction to Machine Learning (Winter 2021)
- CS145: Introduction to Data Mining (Fall 2020, Fall 2018)
- CS32: Introduction to Computer Science II, Data Structures (Spring 2019, Winter 2019)

EXTRACURRICULAR ACTIVITIES

- UCLA Volunteer Income Tax Assistance (VITA) Organization: *IRS-certified volunteer*
- UCLA Bruin Mental Health Advisory Committee: *Representative and advocate volunteer*
- UCLA GUM: Graduate-Undergraduate Mentorship Program: *STEM Graduate Mentor*
- QueerinAI : *Member and workshop volunteer*

SKILLS

- **Programming:** Python (PyTorch, TensorFlow), C/C++, LaTeX, MATLAB, SQL
- **Language:** Mandarin (Native), English (Proficient), Spanish (Basic)