Junheng Hao | Curriculum Vitae

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Knowledge is power; knowledge graphs are power to next-generation AI Analytics.

Education

University of California, Los Angeles (Sept. 2017 - Present) **Los Angeles, USA**
- Ph.D. Candidate, Department of Computer Science | **Advisors:** Yizhou Sun, Wei Wang

Tsinghua University (Aug. 2013 - July 2017) **Beijing, China**
- Bachelor of Engineering (Major), School of Information Science and Technology, Department of Automation (Excellent Graduate)
- Bachelor of Economics (Minor), School of Economics and Management

Technion, Israel Institute of Technology (July-Aug 2017) **Haifa, Israel**
- Non-degree Machine Learning Summer School

Publications

1. **Junheng Hao**, Chuan Lei, Abdul Quamar, Vasilis Efthymiou, Fatma Ozcan, Yizhou Sun, Wei Wang. "MEDTO: Medical Data to Ontology Matching using Hybrid Graph Neural Networks", published on 27th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD 2021, Applied Data Science Track). [Paper]
2. Jyun-Yu Jiang, Chelsea J.-T. Ju, **Junheng Hao**, Muhao Chen, Wei Wang. "JEDI: Circular RNA Prediction based on Junction Encoders and Deep Interaction among Splice Sites" (accepted by ISMB/ECCB 2021). [Paper]
3. **Junheng Hao**, Tong Zhao, Jin Li, Luna Xin Dong, Christos Faloutsos, Yizhou Sun, Wei Wang. "P-Companion: Framework for Diversified Complementary Product Recommendation", accepted by the 29th ACM International Conference on Information and Knowledge Management (CIKM2020), Applied Research Track. [Paper] [Amazon Science Blog]
4. **Junheng Hao**, Chelsea J.-T. Ju, Muhao Chen, Yizhou Sun, Carlo Zaniolo, Wei Wang. "Bio-JOIE: Joint Representation Learning of Biological Knowledge Bases", accepted by The 11th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB 2020), **Best Student Paper Award**. [Paper] [UCLA Engineering News]
5. **Junheng Hao**, Muhao Chen, Wenchao Yu, Yizhou Sun, Wei Wang. "Universal Representation Learning of Knowledge Bases by Jointly Embedding Instances and Ontological Concepts", published on 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD 2019, Research Track). [Paper]
6. Chen-Shuo Sun, Xin Pei, **Junheng Hao**, Zuo Zhang. "Accident Impact Analysis in Traffic Safety

and Mobility Using Group Network Features", published on *Transportation Research Part B: Methodological (TRB)*, 2018. [Paper]

7. Tanachat Nilanon, Jiayu Yao, **Junheng Hao**, Yan Liu. "Normal/Abnormal Heart Sound Recordings Classification Using Convolutional Neural Network", accepted and presented at Computing in Cardiology (CinC), 2016. [Paper]
8. Chen-Shuo Sun, **Junheng Hao**, Xin Pei, Zuo Zhang. "A Data Driven Approach for Evaluation of Urban Accident Impacts", presented at IEEE Conference on Intelligent Transportation Systems (ITSC 2016) [Paper]
9. Danfeng Guo, Zijie Huang, **Junheng Hao**, Yizhou Sun, Wei Wang, Demetri Terzopoulos, "A Mobility-Aware Longer-Term Deep Learning Model for COVID-19 PandemicPrediction with Policy Impact Analysis" (prerpint, under review).
10. **Junheng Hao**, Lu-An Tang, Yizhou Sun, Zhengzhang Chen, Haifeng Chen, Junghwan Rhee, Zhichun Li and Wei Wang. "MSGT-GNN: Multi-source Graph Knowledge Transfer" (preprint, under review)
11. Yunsheng Bai, Ruchi Jain, textbfJunheng Hao, Yang Qiao, Zixia Weng, Yizhou Sun, Wei Wang. "Neighbor Aggregative Network Embedding" (preprint)
12. Muhao Chen*, **Junheng Hao***, Jyun-Yu Jiang, Zijun Xue, Yizhou Sun, Carlo Zaniolo, Wei Wang. "Latent Translational Dialogue State Tracking" (prerpint).

Industrial Experiences

Microsoft Research | Research Intern **Summer 2021** | **Redmond, WA**
Project: KG-enhanced document representation learning | **Collaborators:** Chieh-Han Wu, Iris Shen, Ye-Yi Wang, Jennifer Neville

- Enhancing document pretrained representations with infused document knowledge graph (DocKG), including Microsoft Academic Graph (Content + Graph).

IBM Research AI (Almaden) | PhD Intern **Summer 2020** | **San Jose, CA**
Project: Ontology Matching by Utilizing Graph Neural Networks | **Mentors:** Chuan Lei, Fatma Ozcan

- Empowering hybrid graph neural networks (GNNs) for ontology matching between relational databases and standard healthcare ontologies

Amazon Product Graph Team | Applied Scientist Intern **Summer & Fall 2019** | **Seattle, WA**
Project: Diversified Complementary Recommendation on Product Graph | **Collaborators:** Tong Zhao, Luna Xin Dong, Christos Faloutsos

- Enabling diversified complementary recommendation from web-scale product graphs and hierarchical product ontology.

NEC Lab America, Inc. | Research Intern **Summer 2018** | **Princeton, NJ**
Project: Multi-source Graph Knowledge Transfer | **Mentors:** Lu-An Tang, Zhichun Li, Haifeng Chen

- Major project: Graph-based Multi-source graph knowledge transfer and network fusion on enterprise engines for malicious process detection.
- Minor project: Neural based classification modeling for DNS security alerting system.

Research Experiences

Comprehensive KG Representation Learning | Research Assistant **Los Angeles, CA**
Lab: UCLA Data Mining Group, Scalable Analytics Institute (ScAi)

- Joint embedding model (JOIE) of the instance-ontology view in knowledge graphs for knowledge completion and entity typing
- Incorporating ontologies in wide domains of biological knowledge bases

PhysioNet: Heart Sound Recordings Classification | Visiting Scholar **Los Angeles, CA**
Advisor: Yan Liu (Melady Lab, University of Southern California)

- Participating PhysioNet Challenge 2016 (Phonocardiogram classification by revised-AlexNet on EEG spectrogram features).

Data-Driven Methods in Traffic Feature Analysis | Undergraduate Researcher **Beijing, China**
Advisors: Zuo Zhang, Xin Pei (Tsinghua University)

- Using spatial/temporal information of traffic intersections to promote road network facility and avoid congestion.

Academic Services

- **PC member and reviewer**: NeurIPS(2021), ICML(2020-21), AAAI(2021-22), CIKM(2020-21), ICLR(2020-21), KDD(2019-21), ECML-PKDD(2019-21), WDSM(2019), EMNLP(2019), ICDM(2019), SDM(2019), AACL-IJCNLP(2020), etc.
- **Program Committee Board**: IJCAI (2022-2024)
- **Journal/Conference Reviewer**: TPAMI, TBD, TIST, TKDD, etc.
- **Conference Volunteering:** ICLR (2021), KDD (2019, 2020), EMNLP (2020), NeurIPS (2018, 2020).

Teaching

- **[Teaching Associate/Head TA; Winter 2021]** CS M146: Introduction to Machine Learning (Instructor: Sriram Sankararaman).[Website] [Teaching Evaluation]
- **[Teaching Associate/Head TA; Fall 2020]**CS145: Introduction to Data Mining (Instructor: Yizhou Sun). [Website] [Teaching Evaluation]
- **[Teaching Assistant; Spring 2019]** CS32: Introduction to Computer Science II, Data Structures (Instructor: David Smallberg). [Website]
- **[Teaching Assistant; Winter 2019]** CS32: Introduction to Computer Science II, Data Structures (Instructor: David Smallberg & Carey Nachenberg). [Website]
- **[Teaching Assistant; Fall 2018]** CS145:Introduction to Data Mining (Instructor: Yizhou Sun). [Website]

Skills

- **Programming Skills:** Python, Java, C/C++, MATLAB.

- **Operating system & Tools:** Linux (Ubuntu)/Mac OS X, Tensorflow, PyTorch
- **Language:** Mandarin (Native), English (Proficient), German (Basic), Spanish (Basic), Modern Arabic (Basic) [Link]

Extra-curricular activities & Community Services

- **UCLA Volunteer Income Tax Assistance (VITA) Organization:** IRS-certified volunteer serving free tax preparation assistance to underserved individuals in Los Angeles communities. [Link] [IRS/VITA Certificate]
- **UCLA Bruin Mental Health Advisory Committee:** Representative and advocate volunteer [Link]
- **UCLA Dashew Center for International Students and Scholoars:** Team of Global Siblings Program. [Link]
- **UCLA GUM: Graduate-Undergraduate Mentorship Program** STEM Graduate Mentor. [Link]
- **UCLA CS PhD Mentorship Program** Seinor PhD Mentor