Minhao **Jiang**

Research Assistant · Machine Learning Researcher

(+1)217-377-2023 | minhaoj2@illinois.edu | minhaoj2.github.io | minhaoJ2 | minhao-jiang-6bbb03157

Research Area

Machine Learning, Data Mining, emphasizing on efficient, effective and explainable models for real-world applications.

Education

University of Illinois at Urbana Champaign — *Urbana, IL, USA*

B.S. in Computer Science, B.S. in Mathematics (GPA: 3.97/4.0) — *Aug. 2018 - May. 2022*

Advised by: Prof. Jiawei Han

Publications

1. **M. Jiang**, X. Song, J. Zhang, J. Han. *TaxoEnrich: Self-supervised Taxonomy Completion via Structure-Semantic Representations.* In The ACM Web Conference 2022 (*WWW'2022*)
2. H. Shao, T. Abdelzaher, S. Cohen, J. Flamino, J. Han, **M. Jiang**, *et al. Simulating Online Social Response: a Stimulus/response Perspective.* In 2021 Winter Simulation Conference (*WSC'2021*).

Research Experience

Data Mining Group — *Champaign, IL*

Research Assistant — *May. 2021 - Present*

- Worked on data mining researches on **Taxonomy Completion** tasks through structure-semantic features from both the concept names and existing taxonomy. This work has been accepted by **WWW '22** conference.
- Worked on ongoing projects in finding chemicals for reaction groups with cross-modal supervision for subword-guided entity classification.
- Assisted other Ph.D. and Master students in the group on ontology-guided zero/few-shot fine-grained entity typing without heavy supervision.
- Collaborated with other Ph.D. students in the group working on numerical entity recognition with automatic generated labeling functions in scientific domains.
- Advisor: Prof. Jiawei Han

DARPA SocialSim and INCAS Project — *Champaign, IL*

Research Assistant — *Nov. 2020 - Present*

- Worked on the DARPA SocialSim project to investigate the relation between external stimuli and online social response, and ranked top in the final competition.
- Work on ongoing DARPA Influence Campaign Awareness and Sensemaking (INCAS) project.
- Constructed models using data mining techniques including **BERT**, **WeSTClass**, etc., to collect data from Twitter and YouTube to predict the user activities on these social platforms and implemented machine learning model using Random Forest as a purpose of prediction.
- Published the paper in **WSC '21.**
- Advisor: Prof. Tarek Abdelzaher, Prof. Jiawei Han

Active Learning and Constrained Optimization — *Champaign, IL*

Research Assistant — *Jan. 2021 - Present*

- Conducted experiments and researches on topics related with active learning and optimization techniques, including **Frank-Wolfe** and **Iterative Hard Thresholding** method to solve Bayesian Coreset problem.
- Collaborated with Ph.D. students to discuss further directions of improving and resolving constrained optimization problems.
- Advisor: Prof. Sanmi Koyejo

Deep Learning in Medical Image Analysis — *Champaign, IL*

Research Intern at NCSA — *Jan. 2021 - Present*

- Implemented **deep learning models**, and **image recognition topologies** to predict the survival of breast cancer patients at National Center for Supercomputing Applications (NCSA)
- Conducted ongoing experiments with proposal of using multiphoton histopathology for datasets in information extracted from the tumor microenvironment provided by NCSA.
- Advisor: Ms. Xiaoxia Liao, Prof. Alexander Schwing

Honors & Awards

2021-2022 **Tan Family Education Foundation Scholarship,** Grainger College of Engineering, UIUC *Champaign, IL*
2021-2022 **Jefferey P. Blahut Memorial Scholarship,** Grainger College of Engineering, UIUC *Champaign, IL*
2021-2022 **Yunni and Maxine Pao Memorial Scholarship,** Grainger College of Engineering, UIUC *Champaign, IL*
2018-2021 **Dean's List,** Grainger College of Engineering and College of Libral Arts & Sciences, UIUC *Champaign, IL*

Teaching Experience

Course Assistant CS 374: Algorithms and Models of Computation, UIUC, Fall 2021
Course Assistant CS 374: Algorithms and Models of Computation, UIUC, Spring 2021
Course Assistant CS 374: Algorithms and Models of Computation, UIUC, Fall 2020
Course Assistant CS 173: Discrete Structure, UIUC, Spring 2021

Relevant Coursework

Machine Learning CS 440 (Artificial Intelligence), CS 446 (Machine Learning), CS 498 DL (Intro to Deep Learning), CS 498 RL (Reinforcement Learning), ECE 490 (Intro to Optimization), CS 545 (Machine Learning in Signal Processing), CS 546 (Advanced topics in Natural Language Processing), CS 598 BAN (Deep Generative and Dynamic Model), CS 450 (Numerical Analysis)
Data Mining CS 412 (Intro to Data Mining), CS 512 (Data Mining Principles)
Others CS 225 (Data Structures), CS 411 (Database System), MATH 444 (Applied Real Analysis), MATH 482 (Linear Programming)

Skills

Language English, Mandarin
Programming Language Python, C++, Java, JavaScript(ReactJS, NodeJS, ect.), SQL, HTML, CSS, MongoDB, Neo4J, Haskell, LaTeX
Machine Learning Deep Learning (Computer Vision, Natural Language Processing, Graph Neural Networks), Reinforcement Learning (Markov Decision Process, TD-Learning, Deep Q-Learning, etc.)