

Shukai Wang

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EDUCATION

Columbia University

Master of Science in Data Science

New York, NY

Expected Dec 2023

Peking University

Bachelor of Science in Data Science

Beijing, China

Jun 2021

- Honors: Research Innovation Award, 2nd Prize in 13th Chinese Mathematics Competitions

WORK EXPERIENCE

Zhengren Quantitative Investment Management Co.

Algorithm Developer Intern

Beijing, China

Nov 2021 – Jul 2022

- Collaborated with quant analysts to develop models for high-frequency trading; wrote, maintained and modified code of existing strategies into execution platform.
- Conducted research on creating new systematic strategies from scratch and model optimization of existing strategies; carried out post trade analysis and day to day fast-paced trading activities.
- Assigned work and monitored progress of the project.

Institute of Network Computing and Information Systems, Peking University

Undergraduate Research Intern, advised by Prof. Ming Zhang

Beijing, China

Mar 2019 – Jul 2022

- Conducted research on deep learning, collaborated with doctoral students in research projects.
- Worked on several projects and published paper as second author.
- Publication: Liu, Zequn & Wang, Shukai & Gu, Yiyang & Zhang, Ruiyi & Zhang, Ming & Wang, Sheng. Graphine: A Dataset for Graph-aware Terminology Definition Generation. The 2021 Conference on Empirical Methods in Natural Language Processing. arXiv preprint arXiv:2109.04018.

Summer Research: A Pre-trained Model for Cellular Responses to Drug Perturbations,

Summer Intern, Advised by Prof. Sheng Wang (U of Washington Seattle)

Jul 2021 – Nov 2021

- Proposed pre-training model combining BERT with cvae to predict single-cell RNA sequencing (scRNA-seq) data of unseen drugs.
- Processed scRNA-seq data for training, pre-trained model to learn transcriptional drug responses from RNA sequencing; fine-tuned model to adapt to scRNA-seq.
- Paper Under Review: Wang, Shukai & Tan, Yuhao & Zhang, Ming (2021). A Pre-trained Model for Cellular Responses to Drug Perturbations.

Wangxuan Institute of Computer Technology (WICT), Peking University

Research Intern, advised by Prof. Yang Liu

Beijing, China

Apr 2021 – Sep 2021

- Develop Graph Neural Networks to accurately describe images taken by blind people.
- Improved performance of existing best-performing GNN model, adding background nodes and a HOI transformer decoder for human object interaction capture.
- Attended the 2021 CVPR Workshop Vizwiz Grand Challenge and received 3rd Place in Image Captioning group.

PROJECT

Graphine: A Dataset for Graph-aware Terminology Definition Generation

Aug 2021

- Processed data by applying algorithms incl. hash tables, quicksort to reduce time complexity.
- Created a large-scale graph dataset with over 2 million terminology definition pairs and 227 biomedical subdisciplines (each further form a directed acyclic graph).
- Proposed a graph-aware definition generation model integrating transformer with graph neural network.
- Demonstrated dataset's efficacy to evaluate pre-trained language models, compare graph representation learning methods and predict sentence granularity.

Analysis and visualization of US presidential election data in 2020

Dec 2020

- Collected and cleaned data from both Official government dataset and twitter.
- Visualized the geographical distribution of votes based on official datasets.
- Visualize the real-time popularity and support rate of different candidates by analyzing Twitter data.

SKILLS

- Programming skills: Familiar with Python, C/C++, Java, MATLAB, JavaScript, SQL, R