Zimo / Qi

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EDUCATION

Southern University of Science and Technology (SUSTech) Shenzhen, China
Bachelor of Science (expected) Sept. 2021 - Jun. 2025
Major: Data science and big data technology
GPA: **3.74**/ 4.00
Honor and award: SUSTech Excellent Freshman Scholarship

RESEARCH INTERESTS

Graph Neural Network, Reinforcement Learning, Natural Language Process

PUBLICATIONS

- *Yixuan Ding, Qianqian Wang,* ***Zimo Qi,*** *Liuxin Zhu, Youxin Zhu, Lizhuo Luo, Lili Yang, A Causal Inference Method Based on Front-Door Criterion and Difference in Differences for Analyzing Traffic Conditions, (Paper ID: ICCBDAI-2023-000174)*
  Accepted by the 4th International Conference on Computer, Big Data and Artificial Intelligence (ICCBDAI 2023) on Nov. 30, 2023

RESEARCH EXPERIENCES

Causal Inference and Smart City Simulation-Provincial Research Project Shenzhen, China
Supported by **"Climbing Plan" Special Fund of Guangdong** and supervised by Prof. Lili YANG at SUSTech
Member of 6-person Group Sept. 2022 - Present

- Conducted data processing, generalized linear model and utilizing the Front-Door Criterion and the Difference in Differences approach to uncover causal relationships and draw insights into factors influencing traffic dynamics
- Studied the papers on the combination of causal method into reinforcement learning and coded to achieve the application in transportation simulation, using causal inference to enhance the robustness of the reinforcement model
- Intend to train the model in the transportation simulation platform such as SUMO and make adjustment

PROJECT EXPERIENCE

Graph Neural Network Seminar at SUSTech Shenzhen, China
*S*upervised by Assistant Prof. *Haoran ZHANG* *Sept. 2023 - Present*

- Studied *Graph Representation Learning* by William L. Hamilton and acquainted myself with the basic concepts and application of Graph Representation Learning, the principles of Graph Neural Networks and the latest research trend of the field
- Try classic node classification algorithms
- Conducting research on the topic of dynamic network representation and Hawkes process on graph

2023 National University of Singapore (NUS) SoC Summer Workshop **Kent Ridge, Singapore**
Member of cluster Robotic and Deep Learning (4-person) *Jul. 2023*

- Learned about how to build an Arduino car

- Shouldered the responsibilities in the final project of linking the Raspberry Pi and Arduino and integrating computer vision algorithms with hardware components
- Created a product ranked 3 out of 21 groups in the cluster

Augmented Image Captioning Shenzhen, China
Course project, supervised by Assistant Prof. *Hongxin WEI at SUSTech* *Dec. 2023*

- Combined YOLO with ClipCap, employing both object detection proficiency of YOLO and the contextual understanding provided by CLIP to achieve augmented image captioning
- Based on CLIP, mapped not only the image but also the names of objects detected by YOLO into latent space and created two feature vectors to better train the MLP for natural language generation
- Evaluated the trained models considering various metrics, including CIDEr, BLEU, METEOR, and ROUGE, and our framework outperformed the baseline on every evaluation metric, demonstrating the augmented information improved the accuracy of image caption on a small dataset

LLM Finetune Shenzhen, China
Course project, supervised by Assistant Prof. *Guanhua Chen* Dec. *2023*

- Finetuned TinyLlama-1B with clinical instruction data with QLoRA method
- Evaluated the finetuned LLM on MedMCQA dataset

CCF Quantitative Model Competition-National Third Prize Shenzhen, China
Member of 3-person group, supervised by Assistant Prof. *Peng YANG* *Sept. 2023 - Nov. 2023*

- Compared multiple algorithms like LSTM and CNN in the analysis of the real-time data of over 300 Chinese minute-level stocks and ultimately selected XGBoost to predict stock price movements
- Integrated predictive algorithms into strategy algorithms

TECHNICAL PROFICIENCY

- Programming Language / Framework: Python, C/C++, Java, Linux, R
- Professional Software: VS code, anaconda
- Pytorch deep learning tool, Transformer library, PyTorch geometric library, networkX library, etc.