Yuzhe Yang

A Year 3 CSE student with a keen interest in deep learning. Currently exploring GCN, LLM, and NLP.

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Education

The Chinese University of Hong Kong, Shenzhen
School of Data Science *Expected Graduation: May 2025*
B.Eng. in Computer Science

Core Curriculums in CUHK(SZ)
- *UG:* Data Structure, Operating System, Computer Architecture, Machine Learning, etc.
- *PG:* Natural Language Processing

Skills

Programming Languages: Python, PyTorch, C++, RISC-V, HTML, JavaScript, React
Technologies: Git, VS Code, MATLAB, LaTeX, Linux, CLI
Other Tools: Photoshop, Lightroom, Office, Power BI, Figma
Languages: English (Fluent), Mandarin (Native)

Work Experiences

China Telecom Beijing Research Institute *(online)* *Jan 2024 - Mar 2024*
Remote Internship, Beijing, China
- Intern at the AI Large Model Research Team
- Analyze a technology's trends, applications, and industry impact

Shenzhen Branch of China Telecom *Jan 2024 - Now*
Part-time Internship Shenzhen, China
- Time Series Analysis, Data Visualization
- GIS Data Analysis, Data Mining

Research Experiences

FAST-CA: Fusion-based Adaptive Spatio-Temporal Learning with Coupled Attention for Airport Network Delay Propagation Prediction *Aug 2023 - Nov 2023*
Undergraduate Research Assistant SDS, CUHK(SZ)
- Advised by **Prof. Jianfeng Mao**, accepted by **Information Fussion**
- Refined the deep learning model for the prediction of airport network delays
- Implemented baseline models and measure the performance of the proposed model
- Spatio-temporal data analysis and illustration
- Deep Learning, Graph Neural Network, PyTorch, PyTorch Geometric

Research in Conditional Spatio-Temporal Graph *Jan 2024 - Now*
Undergraduate Research Assistant SDS, CUHK(SZ)
- Implemented a conditional spatio-temporal graph model for traffic flow prediction

- Proposed a novel method to construct continuous graphs using Ordinary Differential Equations
- Time convolutional graph neural network

Deep Learning Approach for Early Predicting and Controlling Network Flow in SDN *Jan 2024 - Now*
Research Internship ICNLAB, PKU(SZ)
- Developed a novel network flow prediction method using a modified Informer architecture for Software-Defined Networks
- Designed and implemented a proactive congestion management strategy based on the predictions
- Conducted practical experiments in a simulated environment to validate the effectiveness of the proposed method
- Deep Learning, Time Series Analysis, PyTorch

Projects Experiences

***MCM:* Evaluation Model of Light Pollution by Multi-conditional AHP** *Feb 2023*
- GIS-data analysis, Mathematical modeling
- Analyzed the level of light pollution in the area by population data, regional income data, etc.
- Explored the multifaceted impacts of light pollution on the region
- GeoPandas, Folium

***Kaggle:* 1st and Future - Player Contact Detection Competition** *Dec 2022 - Mar 2023*
- Employed advanced data preprocessing techniques to clean and integrate complex datasets, including video analysis and player tracking information, ensuring high-quality inputs for model training.
- Innovated in creating predictive features by analyzing player movements and interactions through statistical modeling and signal processing, enhancing model accuracy in detecting contacts.
- Utilized ensemble learning and fine-tuned deep learning models to achieve high precision in contact detection
- Bronze Medal

Game Theory Analysis of SEO Strategies: From Methods to Models *Nov 2023 - Dec 2023*
- Researched and implemented various Search Engine Optimization (SEO) strategies to improve website ranking
- Developed and validated a new ranking algorithm incorporating keyword frequency, traffic, and linkage
- Applied game theory principles to SEO, including simulation of an -random walk and analysis of Nash Equilibrium
- Proposed a multi-stage strategy to handle the dynamic nature of SEO

AI-Based Flight Delay Insurance Recommendation System *Jun 2024 - Now*
- Predict flight delays and recommend personalized travel insurance, in order to improve customer satisfaction
- Utilized deep lLearning, NLP, and sentiment analysis for accurate delay predictions and customer sentiment assessment

***Kaggle:* Open Problems - Multimodal Single-Cell Integration** *Feb 2022 - Apr 2022*
- Machine Learning, Data Analysis
- Predict how DNA, RNA & protein measurements co-vary in single cells
- Silver Medal

***Kaggle:* Happywhale - Whale and Dolphin Identification** *Aug 2022 - Nov 2022*
- Machine Learning, Data Analysis
- Identify whales and dolphins by unique characteristics
- Silver Medal

Machine Learning Project *(in class)* *Feb 2023 – May 2023*
- Data Analysis, Data Visualization

- Python: numpy, pandas, matplotlib, sklearn, scipy, etc
- Implemented model: Linear Regression, SVM, Decision Tree, K-Means, PCA, etc.

CPU Circuit design *(in class)* *Jul 2023*

- Verilog, RISC-V
- Implemented simple RISC-V instructions through circuit design and realized CPU pipelining

Activities

MUSE College Student Assistant: Outstanding College Contribution Award *Sep 2021 - Sep 2023*

MUSE College Basketball Team *Sep 2021 - Sep 2023*

P.I.C. Photography Club *Sep 2021 - Jun 2022*