# Liu Kainan

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## EDUCATION

**Zhongnan University of Economics and Law**                                                Sep 2019 - June 2023

Bachelor of    Data Science and Big Data Technology

 • Weighted average grade: 85.4/100

 • Relevant Coursework: Advanced Algebra(90/100), Machine learning, Neural Network and Deep learning (89/100), Optimization Theory (93/100), C++ Programming (90/100), Python Data Analysis (93/100), Data Structure (84/100) Big Data Case Analysis (96/100)

## RESEARCH EXPERIENCE AND PROJECTS

**Propose an integrated GAN model for outlier detection and batch correction in multi-modal transcriptomics**                                Apr 2023 - Now

- The GAN based model we propose reaches the **state-of-the-art in both two challenging tasks** and we are in the final stages of our thesis and **intend to submit it to KDD**
- In anomaly detection task, inspired by the memory bank in MoCo, I propose a trick which is based on attention mechanism with queue structure which we called memory unit, greatly improved the performance of GAN based model on anomaly detection tasks
- In batch correction task, inspired by the style transfer task in computer vision, we propose a GAN-based model to remove the batch effect in scRNA-seq data.

**Research on image style migration based on CNN and GAN(Graduation Thesis)**                                                    Feb 2023 – Apr 2023

- Using VGG-19 and CycleGAN for image style transfer of landscape photos of University campus.
- Suggesting improvements to the VGG-19 based image style transfer method, which has problems with unstable training and easy synthesis of images containing a lot of noise

**Stock Price Prediction Based ARIMA-LSTM (Course Paper)**                                June 2022

- Using wavelet denoising to solve the problem that the first-order difference series of stock prices are white noise series and cannot be fitted by ARIMA
- Proved that ARIMA-LSTM combined model improves forecast accuracy in stock price fluctuations compared to ARIMA, GBDT and Random Forest

## INTERNSHIP EXPERIENCES

**China Guangfa Bank, Guangdong**                                                        Jul 2021 - Aug 2021

- Analyze financial data and utilized various tools and software, such as python, Excel and SQL.
- Actively participated in group meetings and discussions

**Guangdong Sangchun Wines CO.LTD.**                                                    Jul 2022 - Aug 2022

- Responsible for the management of field data storage and and participate in assisting with data analysis
- Consolidated knowledge of machine learning and applied it to practical problems, complete with participation in the process of data analysis

## SKILLS AND HOBBIES

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| **Language** | English - Fluent (IELTS 7), Mandarin Chinese – Native |
| **Software** | Typora, LaTeX, Excel, PowerPoint, Visio |
| **Programming** | Python, Java(familiar with data structure and using Linux) |
| **Hobbies** | Tennis (Member of the university tennis team; Seventh place in the Hubei University Tennis Competition for men's teams) & Calligraphy |