Zhuowen Liang

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EDUCATION

South China University of Technology   **Sep. 2021 - Jun. 2025**

Bachelor in Computer Science and Technology   **GPA: 3.91/4.0**

Computer Science and Technology (Innovation Class)   **Rank: 4/25**

   - Elite Class, English-medium instruction

   - Implement a second round selection mechanism, admitting only 30 students in the entire school

Relevant Coursework: Math Mathematics Analysis, General Physics, Principles of Compiler, The Design
and Analysis of Computer Algorithm, Advanced Language Programming in C++, Java Programming,
Linear Algebra and Analytic Geometry, Discrete Mathematics, Deep Learning, Data Structure

PUBLICATIONS

UNDER REVIEW:

VisLTR: Visualization-in-the-Loop Table Reasoning. Jianing Hao, **Zhuowen Liang**, Chunting LI, Yuyu Luo, Wei Zeng,
https://arxiv.org/abs/2406.03753

RESEARCH EXPEIENCES

Visualization-based Time-series Fuzzy Query   **The Hong Kong University of Science and Technology (Guangzhou)**

Research Assistant at the Information Hub for Data Science and Analytics   **Jan. 2024 - Apr. 2024**

- Mentor: Professor Wei Zeng, Assistant Professor in Thrust of Data Science and Analytics.

- Assisted in coding and writing papers, focusing on data analysis, expansion, the use of vector database(Chroma) and **multimodal alignment**. Specifically responsible for the alignment of sketches-images-text, ultimately implementing alignment through fine-tuning **Clip**.

Resident Useful Life prediction(SRP under the guidance of Prof.Li)   **South China University of Technology**

Responsible for training deep learning models   **Apr. 2023 - Apr. 2024**

- Used wavelet transform to process the PHM bearing dataset. Then constructed a **CNN&LSTM** model, where the CNN encoder's outputs were fed in real-time to the LSTM units, yielding predictions for the remaining useful life.

- Applied for **Software Copyright.**

SUMMER SCHOOL PROGRAMME

National University of Singapore   **Singapore**

Artificial Intelligence and Machine Learning Programme   **Jul. 2023**

- Focused on topics related to machine learning and digital image processing.

- Led our group to complete the final project on traffic signal recognition, which involved pre-processing, feature extraction, classifier implementation, and cross-validation to optimize classification accuracy.

- Achieved a **distinction** grade and received a letter of **recommendation**.

PROJECTS EXPERIENCE

Deep Learning Project Design: mathematical formula recognition   **(Group work, leader)**

- Used **ResNet-34** as the encoder and **Transformer** as the decoder with cross-entropy loss function to train the model and develop a recognition system. Optimized by adjusting vocubularies.

Software Engineering Project Design: 5G Phone Assessment Website   **(Group work, leader)**

- Responsible for Data Extraction, Transformation and Loading (ETL) based on Web Crawler Technology, and leveraged Baidu api to deal with Natural language processing and sentiment analysis of comments.

Database Project Design: Hospital Database Management System   **(Group work, member)**

- Responsible for the design of the Admin system by **MySQL** and **Django**, including **front-end page** design and urls jump, as well as the implementation of specific functions at the back end.

SCHOLARSHIPS

Tencent First Price Scholarship   **Dec. 2023**
  - Only awarded to junior undergraduates in my department
  - In my grade level, the proportion of students who win this award is 2%
The First Price Scholarship   **Nov. 2023**
The Second Price Scholarship   **Nov. 2022**

AWARDS

2022&2023 Merit Student(twice)   **Nov. 2022**
2022&2023 Excellent League Member(twice)   **Nov. 2022**
2022 Chinese Mathematics Competitions(Guangdong) - First Prize   **Nov. 2022**
2023 Asia and Pacific Mathematical Contest in Modeling(APMCM) - Third Prize   **Dec. 2022**
2023 MathorCup College Mathematical Modeling Challenge - Third Prize   **Jun. 2023**

SKILLS & INTERESTS

Languages: Mandarin (Native), Cantonese (Native), **English (Fluent)**
Programming: **Python[good]**, C++, JAVA, SQL, Ruby
Technical skills: Pytorch, Machine learning, Web Crawler, MATLAB, SPSS, Proteus, Excel
Interests: Basketball, Table Tennis, Swimming, R&B Music and Reading