Ziye Chen

Boston, MA | ziyechen@bu.edu | +1 857 961 9101 | ziye2chen.github.io

Education

Boston University, MS in Artificial Intelligence — Sept 2023 – Jan 2025

- GPA: 3.7/4.0
- **Coursework:** Artificial Intelligence, Deep Learning, Natural Language Processing, Image and Video Computing

Nanjing Tech University, BS in Mathematics — Sept 2019 – June 2023

- GPA: 3.5/4.0
- **Coursework:** Machine Learning, Deep Learning, Mathematical Analysis, Advanced Algebra, Analytic geometry, Mathematical Optimization

Research Interest

Large Language Model: LLM Frameworks, Prompt Engineering, Multimodal LLMs

Theory of Deep Learning: Transformer, KANs (Kolmogorov-Arnold Networks)

Research Experience

LLMs framework for Mathematical Analysis — Ongoing

- I'm trying to build a Mathematical Analysis Problems Dataset, based on *Problems in Mathematical Analysis* written by Demidovich, for LLMs to fine-tune.
- I'm trying to present a guiding framework for LLMs to solve Mathematical Analysis Problems with standard ϵ-δ mathematical language.
- I'm trying to give a standard to evaluate the performance of the framework in different large language models.

P300 EEG Signal Shape-Type Function Research — Spring 2023

- Developed a P300 signal energy detector based on the Neyman-Pearson theorem and GLRT, successfully filtering out white noise and improving signal detection accuracy
- Employed the AMPD algorithm for effective peak detection, identifying significant peaks in EEG data and isolating potential P300 signals
- Implemented clustering analysis with an enhanced correlation distance method, accurately deriving the shape-type function of the P300 signal, which distinguishes between the growth and decline phases

Project Experience

Chinese OCR through a CRNN Architecture with Attention — Spring 2024

- Implemented a Convolutional Recurrent Neural Network (CRNN) architecture, enhancing the contextual understanding of the text
- Enhanced the model with an attention mechanism to improve focus on relevant segments of the input
- Make schematics of the model structure

Election Narratives through Prompt Engineering with GPT — Spring 2024

- Used Gmail API to extract the required emails from election related email accounts as data
- Creating charts to analyze basic information about political parties
- Used prompt to analyze emails merged every week

UBC Ovarian Cancer Subtype Classification and Outlier Detection — Fall 2023

- Compressed images by Gem pooling (each image in the dataset is larger than 1GB in size)
- Enhanced image compression techniques and trained an EfficientNet_b0 model to increase classification accuracy
- Utilized boosting techniques for the model and increased accuracy from 65% to 85% with boosting (Ten

independently trained EfficientNet_b0 models voted results)

Technologies

Languages: Proficient in Python, MATLAB, R, C, **Basic** in C++, Java, SQL

Machine Learning: Proficient in PyTorch, TensorFlow

Tools: Visual Studio Code, PyCharm, Github

Scholarships And Awards

Nanjing Tech University The First Prize Scholarship in 2022-2023

The First prize of C/C++ Programming in Jiangsu Division of the 11th Lanqiao Cup National Software and Information Technology Talent Contest

The Excellent Award of C/C++ Programming in National Finals of the 11th Lanqiao Cup National Software and Information Technology Talent Contest

Other Experience

Vice-Chairman of Programmers Association in Nanjing Tech University 2020 - 2022

- Organized the Python course for beginners
- Organized the forum for solving programming problems

Boston University Badminton Player

Nanjing Tech University Badminton Player