Jing GONG

Contact: 86-18022192013

Email: gongj39@mail2.sysu.edu.cn

Personal webpage: https://mikingg.github.io/

Education Background

Sun Yat-sen University (SYSU) **09/2021-06/2025**

Program: Bachelor of Engineering in Software Engineering

GPA: 91/100

Relevant courses: Principles of Compiler (97), Discrete Mathematics (96), Java and Object-Oriented Design (94), Data Structures and Algorithms (91), Software Analysis and Design (91), etc.

Awards: Kingdomcares Scholarship (top 5%, 2022-2023); 1st Class Scholarship for Outstanding Student (top 5%, 2022-2023); 3rd Class Scholarship for Outstanding Student (top 30%, 2021-2022); Mathematical Contest in Modeling (MCM), Meritorious Winner (2024); Sun Yat-sen University Programming Design Novice Competition, Second Prize (04/2023).

International academic experience: International Asian Studies Program, Chinese University of Hong Kong

Publication

Jing Gong, Yanghui Wu, Linxi Liang, Zibin Zheng, Yanlin Wang. *CoSQA+: Enhancing Code Search Dataset with Matching Code*. Preprint available at arXiv:2406.11589 [cs.SE].

Jing Gong. *A Study of Tennis Momentum Based on k-means++ and LightGBM Models*. Accepted. 2024 International Conference on Computer Engineering and Information Processing, March 2024.

Research Experience

International Summer Undergraduate Research Experience, University of Notre Dame **04/2024-08/2024**

Supervised by Prof. Xiangliang Zhang

- Conducted research utilizing large language models for Bayesian Optimization, focusing on the integration and automated tuning of diverse tools.
- Analyzed and validated tool modifications by experimenting with various parameter adjustments and sampling methods to optimize performance across different datasets.
- Will develop and implemented modifications in tool algorithms (self-evolution), enhancing their adaptability and efficiency in parameter optimization.

SYSU Innovation Project: Code Search Optimization Techniques Base on Large Model Query Optimization and Code Optimization **02/2024-Present**

Project leader, supervised by Prof. Yanlin Wang

- Completed a prestudy on the optimization of datasets based on large models and researched the cause of model misselection in the code search, as well as existing errors in the dataset through error analysis.
- Constructed an experimental framework, and then fine-tuned and replicated state-of-the-art models such as Unixcoder and CodeT5 for code search experiments on CosQA, concluding that 9.8% of the data in CosQA was mislabeled and 1.6% of the data did not meet the requirements of the code search query.
- Worked on a paper and expected to present it at a leading international conference.
- Prepared 3 research proposals and organized 10+ summaries and reports of results

SYSU Innovation Project: Gradient-free Federated Learning **12/2022-12/2023**

Key member, supervised by Prof. Xiaoyu He

- **Research focuses:** Explored Gradient-free federated Learning for devices with constrained computational resources; Streamlined federated learning deployment with an adaptive automated parameter selector.
- Developed a scalable federated learning framework that involves randomly selecting clients, placing the model on the server-side, training the clients on the client-side, and uploading the training results.
- Created a dynamic auto-tuning algorithm to optimize execution speed and learning rates.
- Benchmarked optimization methods, such as gradient descent and minibatch-SGD, on datasets like mmist and rcv1 to evaluate their efficiency in logistic regression contexts.

Project Experience

2024 Mathematical Contest in Modeling **02/2024-02/2024**

Project Leader

- Awarded Meritorious Winner.
- Utilized LightGBM to predict game outcomes with over 80% accuracy. Quantified momentum's impact using exponentially weighted moving leverage and K-Means++ clustering.

SYSU Club Management and Recruitment System **03/2022-03/2024**

Project Leader

- Constructed the overall code framework for the front and back ends using a full-stack development approach.
- Introduced a development model that separates the front and back ends. Used Vue Router for routing management and

Vuex to manage shared state.
- Collected requirements and feedback to optimize user experience and interface design.
- Led a cross-functional team through the development lifecycle from ideation to deployment.
- Facilitated efficient communcation between stakeholders to gather requirements and feedback.

SSE_MARKET for the School of Software Engineering **03/2022-03/2024**

Project Leader

- Developed the back-end framework using Go and the front-end framework using Vue to implement various features.
- Liaised with faculty and student to collect demands and requirements, prioritized user feedback, and improved the platform's features.
- Progress: used by over two-thirds of the college's students and faculty, making it the largest communication center in the college.

The development of the tool: TitleGPT **09/2023-01/2024**

Core member

- Combined ChatGPT with a custom-built feedforward neural network to create highly engaging headlines.
- Results: the attractiveness of titles generated by TitleGPT increased by 206.06% compared to the original titles, and increased by 158.97% compared to titles directly generated by ChatGPT.

Skills & Others

Language Skills: English: proficient; Mandarin: native speaker; Cantonese: native speaker

Computer Skills: Proficient: Python/C++/Java; intermediate: Go/Javascript; basic: MATLAB

Competitions: Participated in 3 mathematical modeling competitions using Python, Numpy/Scipy, PyTorch, and TensorFlow, and respectively studied the computation of Green GDP, the optimization of the distribution of fixed-sun mirror fields, and the effect of momentum on the game of tennis.