Zhu Kairui

- **Email:** kairui.zhu@mail.utoronto.ca
- **University:** University of Toronto (Class of 2027)
- **Location:** Toronto, Ontario, Canada
- **GPA:** 3.8 / 4.0
- **GitHub:** https://github.com/kerrypig
- **Google Scholar:** https://scholar.google.com/citations?user=ISeMU6EAAAAJ&hl

Objective

To obtain a position in Data Analysis, Python Development, or Java Backend Development, leveraging my skills in programming, design patterns, and algorithm implementation.

Professional Summary

Highly motivated undergraduate student at the University of Toronto specializing in Statistics, Applied Mathematics, and Computer Science. Experienced in software development using Java, C, Python, and MATLAB. Strong problem-solving skills demonstrated through various academic projects and research publications. Active member of the Chinese Students and Scholars Association and recognized in the Dean's List (2024).

Skills & Technologies

- **Programming Languages:** Java, C, Python, MATLAB
- **Frameworks & Tools:** JavaFX, Linux, Data Visualization (MATLAB, Matplotlib)
- **Others:** Design Patterns, Object-Oriented Programming, Multithreading, Process Management

Education

- **University of Toronto**
  - Bachelor of Science (Honours)
  - Specialization: Statistics, Major: Applied Mathematics, Computer Science
  - GPA: 3.8 / 4.0
  - Dean’s List (2024), Chinese Students and Scholars Association Member
- **Guangdong Country Garden School (IB Programme)**
  - Completed IB Programme (2020-2023)

Projects

1. Java-Based Drawing App

- Designed a drawing application utilizing Strategy, Observer, MVC, and Command design patterns to enable flexible shape creation, editing, and manipulation with undo/redo support.
- Implemented with JavaFX for graphical rendering and user interaction.
- Project Details

2. mysh - Custom Shell Implementation (C Language)

- Developed a Unix-like shell named `mysh`, supporting built-in command execution, environment variable management, and input/output handling.
- Implemented variable expansion, command tokenization, and custom error handling.
- Project Details

3. Huffman Tree Compression System (Python)

- Implemented a lossless data compression and decompression system using Huffman Coding.
- Designed efficient binary tree structures and algorithms to optimize compression efficiency.

Research Experience

- **Prediction Model of Lake Water Volume (Research)**
    - Co-authored a paper on predicting lake water volume using K-means clustering and autoregressive models.
    - Presented at the ICECC 2022 conference.
    - Paper
- **Convolutional Neural Network for Face Recognition**
    - Designed a human face recognition program using FaceNet and Convolutional Neural Networks (CNN).
    - Trained using CASIA-WebFace dataset, utilizing Triplet Loss and L2 normalization.
    - Project Details

Languages

- **Chinese:** Native
- **English:** Fluent (IELTS 6.5/9)