RUNZE (AIDEN) CHENG

E14 9AJ | 4 Mastmaker Rd, London, UK
cn.aiden.cheng@gmail.com | +44 7443089654 | github.com/AidCheng

About me

- Currently looking for Summer/Winter/PlacementYear internship with respect to Computer Engineering.
- Proficiency in C/C++, Java, Python, Haskell and SQL with over 3 years of programming experience.
- Strong interests in Machine Learning, Data Analysis, Engine Dev and Quantum Computing.
- Understands the important concepts as SWEer in the industrial workflow, supported by my project experience.
- Self-driven learner and team player.
- Tools: Git, Zsh, SSH, CMake and Makefile, Springboot, Mybatis, Numpy, Pandas, Maven etc.

Education

University College London **London, UK**
BSc Computer Science *September 2023 – Present*

- **Core Courses:** Functional programming, Object Oriented Programming, Data-structure and Algorithm Design, Theory of Computation, Computer Architecture and Concurrency, Software Engineering.
- **Minor:** Robotics
- **Expected Grade:** First Class (with distinction)

University College London **London, UK**
Undergraduate Preparatory Certificate for Sci. and Eng. *September 2022 – June 2023*

- **Grade:** Passed with distinction (87%) with 97% in Physics and 94% in Math.

Project Experience

Student Management Web Program **London, UK**
Oct 2024 - Now

- Collaborated with a team of junior developers to build a web-based student grade management system from scratch.
- Leveraged legacy documentation and initial code configurations to implement critical features and maintain project continuity.
- Followed a rigorous test-driven development (TDD) approach and utilized JaCoCo to ensure the test coverage.
- Established a modular backend architecture using Springboot (RestAPI, RepositoryClass, H2 Database).
- Employed GitHub for collaboration, utilizing issues, pull requests, and team reviewsMade use of Maven test.
- Integrated tools like Checkstyle, Spotbugs, and JaCoCo to maintain code quality, enforce coding standards, and measure test coverage**.**

Geometry-War **London, UK**
github.com/AidCheng/Geometry-War-Game *August 2024*

- Developed an indie game using C++ and the SFML library.
- Built the game with the third-party module utilizing CMake.
- Used shared_pointer to implement the RAII mechanism.
- Designed systems to handle specific game functions like lifespan, movement, and spawning.
- Incorporated various graphical effects utilizing game mathematics, such as bound protection, explosions, and shooting mechanics.

Data mining on market performance **London, UK**
December 2023

- Conducted a data mining project using Python with Numpy, Pandas, Scipy, and Statsmodels libraries.
- Analyzed specific product reviews on Amazon to extract and quantify information for sellers.
- Applied TOPSIS and TF-IDF models for data quantification.

Embedded system application with Arduino **London, UK**

September 2023 – December 2023

- Built a control system as part of a bioreactor with NUCLEO and ESP32 microcontroller. The system is able to control three major envitonmental parameters using NUCLEO and actuators and update the real-time data to the cloud through ESP32 and AWS.
- Outcome:
    - Comprehension of system interruption, timer, I/O, memory and ESP32 dev
    - Communication protocol between microcontrollers (especially I2C) and backend database
    - Teamwork experience in large group project

Tetris AI **London, UK**

November 2023

- Developed a Tetris AI player using Python.
- Designed the AI to predict possible outcomes, score each move, and select the best steps for achieving the highest score.
- Scored movements based on factors like brick height, bumpiness, and valleys on the board.
- The AI performed exceptionally well in tests across five random seeds.

Research project on Artificial Intelligence's application in medicine **London, UK**

Feb 2023 – May 2023

- Critical investigate into the state of art applications of artificial intelligence in medicine, specifically in
    - AI model helping to predict the bio-structure of various kinds of protein (Focusing on the example of AlphaFold 2)
    - Computer vision approach to identify different tissues within in-vivo environmnent
- From research into written presentation

Awards

The Mathematical Contest in Modelling (MCM) 2024 **London, UK**

Successful Participant *2024*

The Sichuan Province Physics Olympic Games **Chengdu, PRC**

2nd Prize *2022*

The Sichuan Province Math Olympic Games **Chengdu, PRC**

2nd Prize *2019*

Activities & Leadership

UCL Computer Science Society **London, UK**

Member *September 2023 – Present*

President of the Student Union **Chengdu, PRC**

Tanghu High School *December 2019 – June 2022*

Skills & Interests

Skills: Fullstack development. Strong Programming skill in C/C++, Haskell, Java and Python. Experience with fundamental data mining (numpy and pandas). SQL, Springboot, Vue and UNIX. Good understanding and problem-solving ability in Math and Physics. Leadership, team work and communicating skill.

Interests: Coding, App Development, Quantum Computing, AI, Machine Learning, Data analysis and statistics, Physics. Video gaming and Sudoku.

Languages: Mandarin (Native speaker), English (Native-speaker level), Japanese (Beginner).