

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, MIPS assembly, JavaScript, React 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, Axios etc.
- Skills: CI/CD, TDD, UI/UX Design, Computer Architecture

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

Aura2 Sensory Room NPU Music Spectrum Analyser- Ongoing, Open Sourced

London, UK

Working with Intel and NAS (National Autistic Society)

Oct. 2024 - Now

- Developed an audio signal processing application leveraging Intel's NPU and GPU acceleration, designed to help autistic children engage with and "feel" music through immersive visualizations.
- Created a responsive, user-friendly interface enabling occupational therapists to set up sensory rooms with interactive.
- **AI-driven visuals and shaders** that synchronize dynamically with auditory input.
- Integrated a camera tracking system to capture and respond to children's movements, allowing visual elements to interact in real-time based on their location and activity.
- Optimized AI processing using **Intel OpenVINO**, enabling efficient model deployment across CPU, GPU, and NPU.

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 using **Springboot (RestAPI, RepositoryClass, H2 Database - SQL)**.
- Designed **UI/UX** for the frontend and implemented using React Framework and Axios.
- Employed GitHub for collaboration, utilizing issues, pull requests, and team reviews
- Made use of Maven Test and **Github Action** to ensure **CI/CD** workflow during the team work.
- Integrated tools like Checkstyle, Spotbugs, and JaCoCo to maintain code quality, enforce coding standards, and measure test coverage.

Geometry-War

github.com/AidCheng/Geometry-War-Game

London, UK

Aug. 2024

- Developed an indie game using **C++** and the **SFML** library.
- Built the game with the third-party module utilizing **CMake**.
- Used `shared_ptr` 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

Dec. 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

Sep. 2023 – Dec. 2023

- Built a control system as part of a bioreactor with **NUCLEO and ESP32** microcontroller. The system is able to control three major environmental 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

Nov. 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.

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

IBM Qiskit Fall Fest for Quantum Computing

London, UK

Participant

Oct. 2024

President of the Student Union

Chengdu, PRC

Tanghu High School

Dec. 2019 – Jun. 2022

Skills & Interests

Skills: Fullstack development, OOP, Computer Architecture. Strong Programming skill in C/C++, Java, Python, Haskell and MIPS Assembly. UI/UX design, CI/CD, TTD. Pandas, Numpy, Scipy, Matplotlib. Experience with data mining and ML. Game Dev. SQL, Springboot, Vue, React. UNIX shell. Problem-solving ability in Math and Physics. Leadership, team work and communicating skill.

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

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