Rocco Jiang

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Education

Imperial College London *MEng Computing* 2020 – 2024

First-Class Honours in Year One (78%) and Year Two (80%)

Modules include: Software Engineering Design (87%), Graphs & Algorithms (76%), The Theory & Practice of Concurrent Programming (88%), Compilers (91%), Reasoning about Programs (82%), Models of Computation (83%), Type Systems for Programming Languages (75%), Introduction to Machine Learning (73%).

Work Experience

Imperial College London

Undergraduate Teaching Assistant Oct 2021 – Present

- Directing **weekly small-group tutorials**, marking first-year student exercises, and explaining concepts and design patterns in **functional and object-oriented programming**.
- Selected as **one of 50 students** to be a lab assistant, amongst 146 applicants.

Undergraduate Student Researcher Jul – Oct 2022

- Investigated the current state of **editor tooling** in Haskell, focusing on support for automatic refactoring.
- Explored the possibility of implementing refactoring tools using **algebraic effect systems**.

CUB3, Inc. *Software Engineer (Contract)* May – Jul 2022

- Developed a MVP in five weeks as a team of 4, utilising **agile methodologies** to deliver iterative builds for user testing.
- Led user research in my team, employing **human-centred design principles** to develop a successful product meeting the needs and expectations of our users.

Projects

ML Language REPL *Scala* Dec 2022 – Present

- Designing an **educational tool** suitable for Imperial's Type Systems for Programming Languages course, implementing Algorithm W type inference in the manner presented in the course notes.

AR Robot Simulation *C#, Unity Engine, Oculus Integration SDK* Oct 2022 – Feb 2023

- Collaborating with the Adaptive & Intelligent Robotics Lab to **develop an in-house tool** to visualise the sim-to-real gap, by overlaying simulated robots over their real-life counterparts in **augmented reality** on Meta Quest headsets.
- Leveraging a **Scrumban agile framework** to manage project progress and prioritise work in a team of 6.

WACC Compiler & Program *Scala, Parsley* Jan – Mar 2022

- Led a team in writing a compiler for a While-like language, achieving one of the **highest marks** in our cohort **(95%)**.
- Utilised **GitLab CI/CD** to **automate build and test processes**.

ARM Emulator/Assembler & Maze Generation Visualisation *C, Raylib* May – Jun 2021

- Awarded the **ARM Prize (Best Overall Project)** for a first-year group project, which was also showcased at the Imperial College **Undergraduate Virtual Open Week** and Department of Computing **Offer Holders' Day**.

Course Resources Website *HTML/CSS* Jan 2021 – Jul 2022

- Improved **studying efficiency** for students by creating a website centralising module resources, **solving a widespread complaint** that online course materials for different modules were difficult to locate.
- Maintained the website which was utilised by the majority of my cohort, and forked by another cohort for their usage.

Traversal Language Interpreter *Python, RPLY* Apr 2019 – May 2020

- Designed Traversal, a simple educational programming language for young students, aimed to bridge the gap between block-based and textual programming languages.

Skills

Programming Languages

Proficient: Scala • Kotlin • Java • C
Familiar: Haskell • Python • C# • C++ • Elixir • JavaScript/TypeScript • HTML/CSS

Technologies

Comfortable with: Git • Unix • LaTeX • Visual Studio Code • IntelliJ IDEA
Previously worked with: ScalaTest • ScalaCheck • JUnit • JMock • Unity Engine

Languages

Native: English • Mandarin Chinese