

Haashim-Ali Hussain he/they

LinkedIn: [linkedin.com/in/haashim-ali/](https://www.linkedin.com/in/haashim-ali/)

Email : business@haash.im

Website: haash.im

PROFILE

President's Scholar, studying Computing at Imperial College London. Aspiring software engineer, with contributions to projects with a cumulative quarter of a billion downloads. Interested in quantitative finance and artificial intelligence.

EDUCATION

- Imperial College London** South Kensington, London
 - MEng Computing (AI and ML) 4Yft — Predicted a First* 2021 - 2025
 - Founded Game Development Society, presented on Software Architecture and Engineering* 2022
- The Royal Grammar School** High Wycombe, Buckinghamshire
 - A Levels — Maths (A*), Further Maths (A*), Computing (A*), Spanish (A*)* 2019 - 2021

EXPERIENCE

- Software Engineer Intern @ Optiver** On-Site, Amsterdam
 - Internship Project - Python, C++, C#, Derivatives Trading* 2023
 - Optimisation:** Added load balancing to a set of internal applications, reducing latency by 70% globally.
 - Encryption:** Worked to add TLS encryption of network traffic for a set of internal applications.
- Software Team Lead @ Aether** Remote
 - Game: MyCafé - TypeScript, React, CI/CD, Game Design* 2022 - 2023
 - Game Development:** Lead a team of full-stack software engineers working on a multi-platform game.
- Freelance Software Engineer @ Inctus** Remote
 - Software Projects - Lua, TypeScript, Roblox* 2019 - 2022
 - Virtual Valley Games:** Created a full-stack physics simulation, pairing damped harmonic motion solvers with trochoidal wave simulations, for a game with 200M+ downloads.
 - Nanoblox:** Minimised network load using both client-side and server-side optimisations, for the largest administration platform on Roblox, with 30M+ downloads.

PROJECTS

- PintOS - Operating System** *C, ASM, GitLab CI/CD* 2023
 - Process Management:** Monitored process CPU-Usage and priorities to feed into a pre-emptive multi-level-feedback-queue scheduler. Used synchronisation primitives to handle multi-threading and priority donation to avoid process starvation.
 - Memory Management:** Dynamically adjusted process stack space and virtual memory using demand paging.
- WACC - Compiler** *Scala, Parsley, GitLab CI/CD* 2023
 - Parsley Framework:** Left factored the language grammar, reducing to LL(k), parsing top-down with parser-combinators.
 - Optimisations:** Implemented tail-call optimisations, and extended grammar to allow for overloaded first-class functions.
- Quot-A-Lecture** *Python, HTML/CSS, Django, GitHub CI/CD* 2022
 - "Google" for Lecture Transcripts:** Created a full-stack Django web-application using natural language processing to facilitate semantic searching of questions asked during recorded lectures.
 - Multi-Award Winning Hackathon Entry:** Won DoCSoc's Best Educational Hack, runner up in another category.
- ROAST - Replicated Observable Asynchronous State Tree** *TypeScript, GitHub CI/CD* 2021
 - Simple State:** Used the Promise pattern with an Observable State Tree to simplify network replication and state accesses.
- 2D Physics Engine** *Python, PyGame* 2020
 - Mathematical Model:** Paired Verlet integration with the Separating Axis Theorem and impulse based collision resolution.
 - GUI Framework:** Reduced technical debt by augmenting PyGame's API with functionality for visualising the simulation.

SKILLS

- Programming Languages:** C, C++, C#, Haskell, Kotlin, Java, Scala, Python, Lua, TypeScript, JavaScript
- Technologies:** Git, HTML, CSS/SCSS, Bash, SQL, L^AT_EX, Django, Parsley, React, NGINX
- Spoken Languages:** Native: English — Fluent: Spanish — Conversational: Japanese, French

AWARDS

- President's Scholarship** Imperial College London
 - Awarded to the top 112 applicants across all courses on the grounds of academic excellence.* 2021
- Best Educational Hack** ICHack
 - Awarded for creating the best educational hack, Quot-A-Lecture, at the largest student-run hackathon in the UK.* 2022