

# Aryan Ghobadi

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US Permanent Resident, UK Citizen

## EDUCATION

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### Imperial College London

London, UK

*MEng in Electronic and Information Engineering (EECS)*

*Sept. 2019 – June 2023*

- Grade: 2:1 Honours (US: 3.80GPA)
- Relevant Modules: Software Reliability, Advanced Computer Architecture, Deep Learning, Distributed Ledgers, Concurrency Theory
- President of Imperial Persian Society

## EXPERIENCE

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### Software Engineer Intern

Apr. 2022 – Oct. 2022

*Huawei R&D UK*

*Cambridge, UK*

- Developed and tested hardware acceleration modules in the RISC-V architecture using QEMU.
- Performed in-depth analysis of high-latency C and C++ code in Secure Element OS, optimizing critical paths and reducing module runtimes by over 10x.
- Spearheaded the migration from manual-testing infrastructure to a CI/CD-based server-hosted system.

### Software Engineer Intern

Aug. 2021 – Sept. 2021

*CERTARA*

*Sheffield, UK*

- Designed and implemented automation for simulation comparison and report generation, achieving a latency reduction by 90x. Now actively used tooling by the company.

## PROJECTS

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### IOT Controlled Mars Rover | *Embedded Systems, FPGA, C, JS, React.JS/MERN*

- Engineered a fully controllable rover, establishing secure client/server connections and implementing command validation using MQTT protocols.
- Led the design and development of complex C and Verilog algorithms for real-time obstacle detection and autonomous motion. Successfully deployed a user-friendly MERN stack interface for remote control.

### Hardware Acceleration of High-Latency Task using FPGAs | *Verilog, C*

- Developed specialized hardware modules in Verilog to minimize latency and resource usage of an intensive vector calculation, targeting the NIOS II processor.
- Developed a CORDIC framework on Verilog, including an optimized 18-bit core, converter and wrapper modules, along with custom-made floating-point architecture and converters to fixed-point, utilizing DMA at the top-level.
- Reduced calculation latency from 120000ms to 66ms, a speed-up of 1800x. Attained an A-grade.

### Therapy Corner Bot | *Python, AWS, MongoDB, Git, Asyncio, Multi-threading*

- Designed and implemented a full-stack, highly concurrent Discord bot using Python's Discord.Py, hosted on AWS with a RESTful API. 1000+ daily active users served.
- Integrated the bot with AI APIs (ChatGPT, DALL-E, Midjourney) to facilitate user interactions, asynchronous programming/multi-threading leveraged to efficiently handle hundreds of concurrent requests with sub-second response time.
- Deployed continuous integration and deployment (CI/CD) pipelines for automated testing and safe feature rollouts, resulting in high uptime and reliability.
- Integrated with MongoDB's serverless database platform to provide accountability tracking, mental health support and dynamic interactions, enhancing community engagement.

## TECHNICAL SKILLS

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**Languages:** C++, C, Java, Verilog, Rust, Python, JavaScript, HTML/CSS

**Frameworks:** React.JS, Node.JS, Flask, Express.JS

**Developer Tools:** Git, Docker, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, AWS, NoSQL (Firestore, MongoDB), CI/CD