

# Aswathy Ajaykumar

## Software Engineer

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Website: <https://aswathy-ajay.github.io/Portfolio-Aswathy-Ajaykumar/>

## Career Summary

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### Jun 2025 - Present      IoT Security Associate, UL Solutions

- Conduct **hands-on testing** of IoT devices following technical standards - EN18031.
- Maintain **good relationship with clients** and transformed customer-provided documentation into structured and technical reports.
- Manage workload effectively through **task prioritisation** and **time management** in a lab environment.
- **Adapt quickly** to new testing procedures and technical concepts to meet evolving project needs and compliance standards.
- **Support** ad-hoc tasks to assist project managers in aligning deliverables with the project management plan.
- **Record** and **maintain** accurate test results, logs, and test analysis data for traceability and reporting purposes.

### Sept 2023 - Jun 2025      Lead, Google Developer Groups, University of Southampton

- Prepared and **delivered technical talks and workshops** on various topics to enhance the knowledge and skills of club members. Encouraged other members to share their expertise through presentations and discussions.
- Established and maintained connections with external companies to **secure sponsorships and funding** for club activities.
- **Planned and orchestrated** various events throughout the academic year.
- **Managed the club's budget**, ensuring funds are allocated effectively and responsibly.
- **Supervised** the core team to ensure the successful execution of all events and initiatives.
- **Lead the recruitment process** by screening potential candidates and **conducting interviews**.
- Coordinated with Google and other tech companies to organise guest speakers and industry experts for club events. **Fostered relationships** to bring valuable insights and experiences to the club.
- **Offered guidance and support to junior members**, helping them develop their technical skills and navigate their career paths.

### Jun 2024 - Sept 2024      ENGAGE Summer Intern, University of Southampton

- Designed and developed the **"Match Mission" app** in **Java**, following the **agile** development lifecycle, from requirements gathering and prototyping to testing and debugging followed by final deployment.
- Implemented core matching algorithms including **Gale-Shapley** (Stable Marriage Problem), showcasing real-world use cases such as school admissions and medical residency matching.
- **Led UI development** with interactive gameplay, using **Figma** for design and **JUnit** for testing.
- Conducted **user testing** with schools and iterated based on feedback, followed **agile practices** and version control with **Git**.
- Delivered STEM outreach workshops to **promote diversity in tech and computational thinking**.
- Ensured smooth **communication** with project stakeholders through structured reporting, presentations, and continuous feedback loops.

- Wrote **Python scripts** to read and process biological data, using libraries like NumPy for analysis and Matplotlib to **create informative visualisations**.
- Conducted **in-depth literature reviews** using academic databases.
- Worked with **complex biological datasets**, **extracting** and **summarising** structured information for **analysis**.
- Presented the research work at a British Computer Society (BCS) event, communicating key findings to a broader academic and professional audience and gaining experience in **public speaking** and presenting technical findings.

## Education

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- **B.Eng. Software Engineering (2:1)**- University of Southampton – (2022-2025)
- **AISSCE: A-Levels Equivalent (96.8%)**- Indian School Al-Ghubra, Oman- (2022)
- **Secondary School Certificate: O-Levels Equivalent (94.6%)**- Indian School Al-Ghubra, Oman- (2020)

## Technical Skills

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|--|-------------------------------------|
| • <b>Java (OOP, Multithreading, JavaFX, JDBC, Unit Testing with JUnit)</b> | • <b>Azure</b>                      |
| • <b>Python</b>  | • <b>Flutter</b>                    |
| • <b>TensorFlow</b>  | • <b>VMware</b>                     |
| • <b>Kali Linux</b>  | • <b>Unified Modelling Language</b> |
| • <b>C</b>   | • <b>Event-B Modelling</b>          |
| • <b>Microsoft Suite</b>   | • <b>JavaScript</b>                 |
|  | • <b>MySQL</b>                      |
|  | • <b>Linux</b>                      |

## Core Skills

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|--------------------------------|---------------------------------|
| • <b>Collaboration</b>         | • <b>Communication</b>          |
| • <b>Prioritisation Skills</b> | • <b>Organisational Skills</b>  |
| • <b>Agile Methodologies</b>   | • <b>Stakeholder Management</b> |
| • <b>Leadership</b>            | • <b>Analytical Thinking</b>    |
| • <b>Problem Solving</b>       | • <b>Report Writing</b>         |
| • <b>Decision Making</b>       |                                 |

## Projects

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- **Level Crossing Systems in Railways:** Developed and implemented a safety-critical railway level crossing system of a train model using Event-B formal methods and animations, emphasising rigorous software testing and validation to ensure system reliability and adherence to safety standards.
- **Runway Redeclaration Tool:** Built a Java-based tool with a JavaFX UI to recalculate runway parameters when obstacles are detected. Integrated CI/CD pipelines via GitHub Actions to automate testing and deployment, improving development efficiency and code reliability. Utilised JIRA for task management and project coordination.
- **TetrECS:** Developed a fast-paced block placement game in Java using JavaFX, featuring a 5x5 grid, score multipliers, and increasing difficulty. Implemented core game logic and UI components.
- **Rob the Bank & Rob Press:** These projects focused on web penetration testing and secure web development. Used Burp Suite Pro to analyse and exploit vulnerabilities in web applications. Conducted security assessments, identifying weaknesses such as SQL injection, XSS, and CSRF. Implemented secure development practices using PHP to mitigate these risks.
- **Quiplash Back-end and Front-end:** Developed a cloud-based back-end for a game application using Python Azure Functions and Cosmos DB, featuring user authentication, data management, and integration with Azure Translation and OpenAI services. Created the front-end of the game using Node.js.