Mohammed Ibrahim

Aerial Robotics Engineer





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Profile

A software engineer with a passion for UAVs, finishing an MSc in Aerial Robotics at the University of Bristol. My passion for aerial robotics began with my BSc dissertation and has continued through academic work and personal projects focused on autonomous drone systems. With a strong foundation in software engineering, I enjoy developing clean, reliable systems that explore the potential of aerial technology. My technical background enables me to design and prototype advanced solutions powered by aerial robotics.

Experience

Lead Developer, Arab National Bank ☑

Jan 2024 - Sep 2024

The Arab National Bank is a major bank based in Riyadh, Saudi Arabia and listed on the Saudi Stock Exchange. It is among the top ten largest banks in the Middle East and has received an 'A' rank from Standard and Poor's.

- Led a team of senior developers in building new features for a high-volume B2B payment platform handling hundreds of transactions per minute.
- Enhanced corporate access to core banking by deploying key features such as account verification and improved IPS payment flows.
- Introduced continuous delivery practices, shifting the workflow from rigid BRD processes to agile development.
- Led the integration of Finacle 11x with the B2B payment platform, ensuring seamless alignment with core banking systems.
- Collaborated with the SRE team to implement alerting mechanisms and scale platform resources in response to load.
- Supervised and deployed critical hotfixes to maintain system stability and ensure uninterrupted transaction flow.
- Involved in multiple disaster recovery (DR) activities for the B2B platform and supervised DR efforts across other integration projects to ensure business continuity.
- Collaborated with database administrators to migrate services from OpenShift to a dedicated PostgreSQL cluster.
- Supported the technical onboarding of newly joined integration developers, providing guidance on architecture, tooling, and development workflows.

Senior Integration Developer, *Arab National Bank* ☑

Feb 2023 - Jan 2024

- Contributed to B2B integration to facilitate seamless transactions between business entities.
- Played a key role in developing single and bulk payment solutions.
- Participated in integrating core banking systems, ensuring effective data synchronisation.
- Developed and maintained RESTful APIs using NestJS for secure and scalable financial services integration.

- Supported UAT and production rollouts, ensuring smooth deployment of payment services with minimal downtime.
- Collaborated closely with SRE team to improve CI/CD pipelines and reduce integration-related issues.

Senior Developer, Sure Global Tech ☑

Aug 2021 - Jan 2023

Sure Global Tech is a company specialising in IT consulting and outsourcing. The company offers services in software development, infrastructure, support, and operations. It is also involved in digital transformation and consultations.

- Actively developed and improved multiple production-grade products.
- Rebuilt products from monolithic architectures to microservices architectures, utilising modern technologies.
- Worked across multiple projects and domains, including e-commerce (Jahez ☑) and projects monitoring and tracking (Government entity).
- Developed backend services for the Blu application ☑, the official app of Al Hilal FC, focusing on performance and scalability.
- Contributed to rebuilding the PIK application
 implementing microservices to replace its legacy monolithic architecture.
- Built and deployed the main website for a government entity using Express.js and the Argon Design System, ensuring a responsive and accessible user experience

Full Stack Developer, Sure Global Tech ♂

Dec 2020 - Jul 2021

- Developed full-stack applications leveraging Vue.js, PostgreSQL, and NestJS.
- Researched industry standards for system modernisation.
- Worked closely with product owners and project managers to improve the development process, transitioning from BRD-based planning to agile methodologies.
- Contributed to developing an operations and maintenance platform in collaboration with the operations department.
- Participated in migrating services from on-premises infrastructure to government cloud platforms, enhancing scalability and compliance.
- Provided support to business customers.

Software Developer, Centre of Excellence in Information Assurance ☑

Oct 2019 – Oct 2020

A non-profit research and consultancy hub focused on advancing cybersecurity in Saudi Arabia. It provides advisory services, develops security solutions, and supports authorities through training and collaboration with global institutions.

- Developed an authentication system using ASP.NET Core and Flutter, similar to Authy and Google Authenticator.
- Built a certificate editor using Fabric.js.
- Authored comprehensive user and admin manuals.
- Designed a structured learning roadmap and mentored several interns.
- Developed key features for a security awareness platform aimed at improving organisational cyber awareness among employees.
- Designed and implemented web pages used in phishing simulation campaigns to test and educate end users.

Software Developer Intern, *Centre of Excellence in Information Assurance* □

Jun 2019 - Sep 2019

- Adapted, localised, and documented open-source tools for specific security use cases.
- Assisted as a coach in a full-stack boot camp for two months.
- Executed phishing campaigns for security purposes.
- Created low-fidelity prototypes for an authentication system using Adobe XD to support UI/UX design decisions.
- Reviewed user stories and contributed to feature planning and refinement during early-stage development.
- Collaborated with senior developers to troubleshoot and resolve bugs in internal web applications, gaining hands-on experience in debugging and code review practices

Education

MSc Aerial Robotics, *University of Bristol* □

Sep 2024 - Aug 2025

On track for Distinction

Key modules: Artificial Intelligence for Robotics, Robotics Systems, Advanced

Topics in Robotics.

Dissertation: Advanced Radiation Mapping in an Emergency Using Terrain-

Following Aerial Robotics

Bachelor's Degree in Computer Science,

Jun 2014 - Dec 2019

Imam Muhammed Ibn Saud University □

- Second Class Honours GPA: 4.58 / 5.0 (equivalent to UK First Class).
- **Dissertation**: Find missing people in distant areas using thermal drone.

Achievements

Shaheen V2 2021

In Shaheen v2, we upgraded the drone's electronics and frame. Secured **2nd place out of over 8,000 teams** at the Saudi Ministry of Interior Hackathon, **earning a \$50,000 prize**. (View Article ☑).

Shaheen V1 2019

Shaheen began as a graduation project—a smart drone equipped with optical and thermal cameras. It autonomously scans for missing persons using deep learning techniques and sends their location to the ground control station upon detection. The drone is custom-built, featuring a Pixhawk flight controller and a Raspberry Pi for onboard processing. This version **earned a Bronze Medal at the 48th International Exhibition of Inventions in Geneva**. (View Medal 2).

Technical Skills

Python | C++ | Node.js | ASP.NET | Arduino | Pololu Robot | Pixhawk | Apigee | Kafka | Git | Linux | PostgreSQL | Docker | ROS | Software Architecture & Design