

# Ahmed Shyhan

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Graduate aerospace engineer with a strong passion for design and innovation. Eager to contribute to projects that make a real-world impact by tackling complex challenges. Adept in CAD modelling and programming, with a hands-on approach to problem-solving and a drive to keep learning and improving.

## Skills and Modules

- Software: Fusion 360 | SOLIDWORKS | MATLAB | PYTHON | ANSYS Mechanical APDL | LabVIEW | GitHub | Jenkins | TensorFlow
- Technical: Prototyping | Finite Element Analysis | Parametric Modelling | 3D Printing Basics | Static Load Simulations | Raspberry Pi | CI/CD Pipeline | Technical Documentation
- Modules: Aerodynamics | Aircraft Systems | Structural Mechanics | Flight Dynamics | Propulsion | Fluid Mechanics | Thermodynamics | Space Systems

## Projects and Experiences

### In-pipe inspection robot | University of Manchester [2024]

- Led the **full-cycle development** of a pipe inspection robot. Designed the chassis in **Fusion 360** and refined it through four major iterations to optimise strength, reduce weight, and meet the dimensional constraints of confined pipe systems.
- Programmed a Raspberry Pi as the robot's central controller, interfacing it with encoders, a motor driver, and a live-feed camera for full system control. Developed **Python scripts** for wireless motion control and real time data transmission, allowing remote navigation and diagnostics.
- Integrated a **TensorFlow**-based model to autonomously detect and categorise structural defects using live footage from the onboard camera. This involved training and deploying a **lightweight neural network** capable of recognising key features such as cracks, blockages, and ruptures, enabling the robot to support real time defect analysis during pipeline inspections.

### Conceptual Satellite Company "BOB SAT" | University of Manchester [2024]

- Collaborated** within a 9-member team to create a **conceptual satellite company** tasked with designing a mission to detect and monitor space debris within the Earth's orbit, simulating the technical and commercial demands of a real-world aerospace project.
- Worked as the Electronics Engineer, responsible for developing the satellite's complete power system architecture. Designed and implemented a **MATLAB**-based script to calculate component-level energy consumption, accounting for solar panel capacity, orbital parameters, mission duration, and energy storage requirements.
- Contributed to commercial strategy and technical decisions within a simulated competitive satellite market, balancing innovation, cost-efficiency, and **risk management** to pitch a viable mission concept.

### Aerospace Engineering Summer Programme | Snowdonia Aerospace Centre, Wales [2023]

- Completed 40+ hours of intensive technical training under the supervision of engineers from leading UK universities, **Boeing**, and **Airbus**, gaining hands-on experience working with UAVs, drones, and model rockets.
- Assembled an Albatross UAV within a 6-member team and performed static thrust testing to ensure propulsion symmetry and accurate centre-of-mass alignment.
- Programmed and piloted a quad-rotor drone, implementing control logic which achieved stable flight performance during open-airfield testing. Developed a deeper understanding of **drone dynamics**, **flight control systems**, and **tuning** for real-world weather conditions.
- Contributed to the development, assembly, and launch of an **Arduino-powered** model rocket. Focused on integrating electronic subsystems and ensuring successful recovery through parachute deployment and telemetry feedback.

### Warehouse Operative | Amazon | Rochester [Oct 2024 – Jan 2025]

- Worked in a **fast-paced** and **dynamic** environment, consistently meeting performance targets while under time pressure.
- Collaborated effectively with colleagues across departments to meet operational demands.
- Completed a variety of warehouse tasks including scanning, sorting, and loading parcels by regional destination, with a focus on accuracy and **workflow efficiency**.

### Volunteer | Cancer Research | London, Southgate [Mar 2019 – Jun 2021]

- Developed strong communication, organisation, and teamwork skills while working alongside other volunteers in a fast-paced, purpose-driven retail setting.
- Contributed to fundraising and store operations to support cancer research efforts.

## Education

### Beng (Hons) Aerospace Engineering | University of Manchester [2020 – Jul 2024]

Degree Classification: 2:2

- Developed a strong foundation in aerodynamics, propulsion, flight dynamics, structural mechanics, and aerospace systems
- Member of the Aerospace Engineering Society
- Participated in the Basketball Society during first year.

### A-Levels | Southgate School [2018 – 2020]

- Maths (B), Physics (B), Chemistry (C)

## Languages

English [Native] | Dhivehi [Fluent] | Japanese [Elementary]