Syed, Mohammad Ali Qasim

ali.qasim2010@hotmail.com | Ali-Qasim.github.io | linkedin.com/in/ali-qasim-syed | (+44) 7879827806

PROFILE

First class Robotics graduate from the **University of Essex**, consistently placed on the **Dean's List for Academic Excellence**. Proficient in **robot navigation**, **AI**, and **embedded systems**. Skilled in **Java**, **Python**, **C++**, and **C**, with some experience using **JavaScript** and **HTML/CSS** in web-based projects. Co-authored a paper on **medical robotics** for Springer-Nature's **Current Robotics Reports (2022)**. **Team player, quick and eager learner, punctual, responsible, and task-focussed**. Strives to solve real-world problems and help bring **smiles** to people's faces with every endeavour.

EDUCATION

University of Essex

BEng Robotics - 1st Class Hons (Dean's list 2019-2022)

Relevant Coursework: OOP, Application Programming, Game Programming, Electronics, Digital Electronic Systems, Engineering Maths, AI, Data Structures & Algorithms, Algorithmic Game Theory, Control Theory and Practice, Robotics (ROS, Simulation and Robot Navigation), Mechatronic Design.

SKILLS

- Programming Languages: Java, Python, C++, C, JavaScript, HTML/CSS, MATLAB.
- Robotics & AI: C++ (ROS/ROS2 and simulations with Gazebo in Linux), mechatronic analysis and design of robotic manipulators using MATLAB Robotics Toolbox, OpenCV in Python and Java, ML Algorithms (Decision Tree, SVM, Regression)
- Principles and Management Technologies: Agile methodology & Scrum (Jira), Git/GitHub, OOP.
- Languages: Native - English, Urdu, Hindi. Learning - Arabic, Japanese.

PROJECTS

Robots in Healthcare: A Scoping Review (2021 – 2022)

Research Paper on Medical Robotics | Collaborated with a team of 5 researchers

Co-authored a paper reviewing the application of robotics in healthcare settings for **Springer-Nature's Current Robotics Reports (2022)**. Worked alongside a team of NHS doctors to sift, extract, and analyse intervention data from almost 4000 publications across 5 medical bibliographical databases.

Capstone Project: Create User-following Drone (2021 – 2022)

Final-Year BEng Project

Programmed an **autonomous** user-following drone using **OpenCV** in **Python**. The goal was to create a target-tracking and obstacle-avoiding drone using inexpensive, consumer-friendly hardware. Intended to implement obstacle-avoidance by adding a proximity sensor but this was excluded in final version. Used **Atlassian Jira** and **Gitlab** for **Agile project management** and **version control**.

Experimental Setup for Psychology Research (2022)

Web-based Experimental Setup for Data Collection

Created interactive experimental setup for cognitive psychology research using **HTML/CSS** and **JavaScript**. The experiment consisted of a graphical puzzle game, followed by an intervention stage wherein subjects were periodically presented with data probes. Probe answers and puzzle-solving time data for each subject was recorded for the researcher in a **cloud database**.

Sanitation Management System (2020 – 2021)
Second-Year BEng Project

Collaborated with a team to design a complete hardware and software system for team sanitation management for **Position Systems Ltd, UK**. Configured custom **cloud storage** solution to store individual hygiene data. Created an accompanying PC application using **Java** to display user records. Used **Jira** and **Gitlab** for **Agile project management** and version control.

Computer Vision (2021)
Smaller OpenCV Projects

Worked on projects involving object recognition, target tracking and statistical shape models using **OpenCV** in **Python**. These included training a **classifier** to detect the type and condition of cookies and creating a program for a museum exhibit, which found the position and bearing of placed waypoints on user-submitted images of physical maps.

Robot Navigation (2020 – 2022)
Mobile Robotics including Simulation

Used **ROS** in **C++** and **Linux** to create navigation programs for mobile robots ROSbot and TurtleBot3. Programmed various user-controlled and sensor-guided navigation scenarios (including obstacle-avoidance with **SLAM**) and simulated them using the **Gazebo** robotics simulator.

Computer Game Programming (2019 – 2022)
Text-Based and Graphical Computer Games

Designed and programmed games in **Java** over 3+ years. Most recently:

> Space Invaders style game featuring multiple enemy types (including bosses), power ups and levels with unique sound profiles.
> Server-handled multiplayer text-based game with **multi-threading**.

WORK EXPERIENCE

Heavenly Desserts (Hospitality Industry) (2021 – 2022)
Gained experience catering to customers as part of a team. This required discipline, attention to detail, teamwork, and the ability to keep up in a fast-paced environment.

EXTRACURRICULARS & VOLUNTEERING

Eastern Public School, Student Council President (2016 – 2017)
Acted as student and school representative. Lead a team of student leaders to organise school events and spearhead student welfare initiatives.

Eastern Public School, Project Infaq (2016 – 2018)
As school captain, led the provision of food packages to 600+ impoverished households in the month of Ramadan. This involved surveying the target area to help focus on those most in need, then organising and arranging delivery/distribution of provisions.

Eastern Public School, Yearbook Editor-in-Chief (2016 – 2018)
Assumed an editorial role in the school's annual student publication to help raise the bar for published material.

Indian International Model United Nations (2016 – 2018)
Attended 3 Model United Nations conferences as both a delegate and a reporter. Developed debating and research skills as a delegate and note-taking and presentation experience as a reporter.