

Fhaeeq Bisiriyu

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Irish citizen: right to work in the UK and EU, no sponsorship required.

PROFILE

Mechanical engineering graduate completing an MSc in Mechatronics and Robotics (dissertation due February 2027), working towards a design engineering role. Confident in 3D CAD and Design for Manufacture, including a live industry brief covering a CAD assembly with manufacturing drawings, BOM and FMEA. Comfortable backing design decisions with ANSYS structural analysis and MATLAB modelling rather than judgement alone.

KEY SKILLS

CAD and design: Creo Parametric, FreeCAD, 3D modelling and assemblies, manufacturing drawings, Design for Manufacture, 3D printing, prototyping; working knowledge of SolidWorks (self-taught)

Analysis: ANSYS structural simulation and FEA, MATLAB and Simulink modelling, sensor data acquisition and threshold monitoring

Build and control: C and C++, embedded Arduino and ESP32, control system modelling

Working practice: requirements traceability, BOM and supplier research, FMEA, technical reporting, presenting design work

EDUCATION

MSc Mechatronics and Robotics, De Montfort University In progress; dissertation due February 2027

Modules: Robotics, AI and Machine Vision; Control, Instrumentation and Digital Signal Processing; Embedded Systems, Programming and System Integration; Engineering Business Environment and Research Methods.

BEng (Hons) Mechanical Engineering, De Montfort University (2:2) 2022 to 2025

Modules: CAD Design, 3D Printing, Thermodynamics, Fluid Mechanics, Industrial IoT.

BTEC Level 3 Electrical and Electronic Engineering, Coventry College 2020 to 2022

ENGINEERING EXPERIENCE

Design Engineering Intern, BoysenB Software Aug 2026 to Sep 2026

Leicester. DMU Graduate Champions Internship: a six week industry placement, around 20 hours per week, employed through De Montfort University.

- Designed and modelled two robots, a massage robot and a biped robot, in FreeCAD under an NDA-covered project brief.
- Produced the CAD assembly and manufacturing drawings in FreeCAD, with design calculations supporting the sizing and material choices.
- Prepared the supporting engineering pack the brief specified: bill of materials with suppliers and lead times, FMEA, prototype build package, and a test plan with a verification matrix traced back to the requirements.
- Wrote the final technical report.

SELECTED ENGINEERING PROJECTS

MSc Dissertation, individual and simulation based 2025 to 2027

- System Identification and Fuzzy-PID vs PID Control of a 1-DOF Pitch-Axis Twin Rotor, in MATLAB and Simulink; due February 2027.
- Building a nonlinear model of the pitch axis from published physical parameters.
- Comparing a fuzzy gain-scheduled PID with a conventional PID through one shared simulation harness.
- Tuning PID gains by ITAE minimisation.

BEng Dissertation: Mecanum vs Omni-Wheels, individual 2025

- Ordered and assembled a mecanum-wheel robot kit with a BBC micro:bit controller, line sensors and an ultrasonic range finder.
- Wrote my own control code, then used the kit's original code for the final tests, as the dissertation focused on researching mecanum against omni-wheels.
- The vehicle followed a hand-drawn course autonomously; an unedited run is on my portfolio.

Smart Monitoring and Predictive Maintenance System 2025

- Designed a threshold-based monitoring system around an ESP32 with an MPU6050 for vibration and orientation, a thermistor, an LDR and a Hall sensor for rotation.
- Logged readings over Wi-Fi to an Arduino IoT Cloud dashboard and showed a warning when any value reached its preset threshold.

Autonomous Shelving Rover, team project

2022

- Did the electronics on a breadboard: DC and servo motors, motor driver, IR sensor, LDR and buzzer.
- Wrote the Arduino Nano code and did the testing.
- The rover carried three 40 mm cubes and completed the full track autonomously, placing one at each platform with no external intervention or communication link.

ACHIEVEMENTS AND LEADERSHIP

- 1st place (team EcoSynergy), ESBF Engineers in Business Hackathon, De Montfort University, May 2025; delivered the team's pitch to the judges.
- Treasurer, De Montfort University Anime Society.

EMPLOYMENT HISTORY

Back of House Team Member, Nando's, Leicester

Sep 2025 to Dec 2025

Food preparation to company standard, health and safety compliance, and shift cover at short notice.

Catering Assistant, ISS, Leicester

Jul 2022 to Oct 2025

Healthcare site catering on a zero hours contract: served patients, adapting service to each patient's needs.

Catering Assistant, Compass Group, Leicester

Nov 2022 to Apr 2024

Served staff and students in a canteen, operated tills, and proposed changes to kitchen and counter communication.

Sales Assistant, Heron Foods, Coventry

Oct 2021 to Jun 2022

Revised restocking for high turnover lines to reduce shelf gaps.