

# Danyaal Nazir

## Graduate Mechanical Engineer

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An eager Graduate Mechanical Engineer wanting to develop leadership, technical skills and gain experience in various industries. Experienced with project management with teams of eight and small-budgeted projects (highest being £6000), prototyping designs & design evaluation. Looking to be a part of a larger team to experience how larger projects are managed and how I can add value to the team and the product.

All that aside, I am honest, trust in me and you will be proud that you did.

### CORE COMPETENCIES

CADD & FEA  
CONTROL SYSTEM DESIGN

MECHANICAL DESIGN  
MECHATRONICS

PROJECT MANAGEMENT  
DFM

PROTOTYPING  
RESEARCH

### EXPERIENCE

#### Self-Employed Private Tutor, Online

May 2023-Present

Engineering, Physics, Maths & a range of other subjects. Researching and delivering useful tutorials that promoted effective learning techniques for the relevant topic. Although not directly engineering experience, it keeps me close to the field.

- Developed revolutionary tactics where the students would gain great revision habits and confidence leading to Great customer retention and a high success rate with pitching to new clients.

#### The University of Hertfordshire, Herts, UK

##### Engineering student proctor

Jun 2022 to Dec 2022

Assisting the engineering department in admin & teaching during prototyping labs. Also overseeing health & safety (signage, PPE & maintaining safety precautions are followed)

- Worked and trained with machines both in additive & reductive manufacturing.
- A member of team of over 50 student engineers
- The maintenance of large machinery
- Assisting in prototyping labs for level 4 & 5 students.
- Assisted in a PHD student's Concrete 3d printer project. Collecting data and troubleshooting.

#### DFA- Direct Flood Aid

Estimated 2011

Assisted in a large community project, DFA, founded by my father and his friends, to help Pakistan recover from the 2011 earthquake.

- Involved in various activities, including packing hygiene and supply packages, from the age of nine.
- Contributed to delivering affordable cataract surgeries for £27 to thousands of individuals.
- Helped implement self-sustaining recovery initiatives, such as teaching bricklaying and providing mechanical tools for independent brick production.
- Participated in one of the most transparent and cost-effective projects, demonstrating significant impact with limited funds.
- Gained first-hand experience in community-driven recovery efforts and the importance of hard work and local involvement for successful rehabilitation

### Education

#### University of Hertfordshire

2021 to 2024

**Mechanical Engineering, BEng Bachelor of Engineering with Honours**

1:1 First-class with Honours

##### Skills learnt

Report writing, CAD&FEA, Control system design, Manufacturing, prototypes, Networking, Research, Process-Improvement, Structural mechanics, Mechatronics, Mechanical Design

Engineering society member, Drone flying club.

# Projects

## DIY vacuum mould machine

May 2024 to Present

- A Prototype involving the combined knowledge of machine design, electricity, and thermodynamics.
- Mainly driven to create custom chocolate moulds from 3d prints but this can be applied to variety of mediums.

## Electroplating 3D prints

Mar 2024 to Present

- Recently been interested in electroplating 3d prints. I like to experiment with Chemistry.
- Involving making 3d prints conductive, then electrolysis to plate the prints.
- Recently prototyped an electro-magnetic stir plate for mixing the electrolyte.

## Final Year Project (FYP)

Sept 2023 to May 2024

- “The design of a cryostat vessel for a superconductor using Aerogel for magnetic levitation purposes.”
- Involving thermal & magneto-static FEA simulations with also a design of experiment to evaluate insulation at various levels and its effect on magnetic levitation.
- Involving all stages of the design process, including prototyping.

## Continuation of the robotics project, £6000 Budget

Feb 2023 to Jan 2024

- Prototyping of the robotic Autonomous Zimmer Frame as proposed.
- Including manufacturing, consulting with technicians, Component purchasing (mechanical and Electrical)
- Developed a pressure sensing matrix out of an electrically sensitive material, Velostat and multiplexed signals.

## Led the winning team of the 2022/23 BUILD-A-BOT COMPETITION

Sept 2022 to Feb 2023

- Presented a 1hr design proposal and defence of our design for an autonomous mobility device for the elderly.
- Development of a strong proposal, including research, CAD, Budgeting, and project planning.

## Industry Crane Prototype Project

Jan 2023 to May 2023

- Led a team to prototype a high-performance crane with a low budget. Our Crane lifted 1.4 times the desired value and had additional safety features.

## Wind Turbine Prototype Project

Oct 2022 to Jan 2023

- Led a team to prototype a “patentable” wind turbine. Involving research into fluid mechanics, designing turbine blades, and using sustainable practices.

## A Team member in 2022/23 Airbus Space Competition

Oct 2022 to Dec 2022

## A deep dive into Geneva Mechanisms

Jun 2022 to Aug 2022

## Showcasing the Versatility of Parametric Modelling in CAD

May 2022 to Aug 2022

## Software Competencies

CATIA V5

MS Office

MATLAB

ANSYS MAXWELL

SOLIDWORKS

VARIOUS SLICERS

PYTHON

ANSYS MECHANICAL

Fusion 360

TINKERCAD

FLEXSIM

Excel VBA