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 prototyping design, design evaluation, CAD and mechanical design. 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.

Portfolio Link : https://nazirprintingpress.github.io/portfolio/index.html

CORE COMPETENCIES

CADD & FEA	MECHANICAL DESIGN	PROJECT MANAGEMENT	PROTOTYPING
CONTROL SYSTEM DESIGN	MECHATRONICS	DFM	RESEARCH

EXPERIENCE

Sole-Proprietor- Nazir Printing Press Chesham, Buckinghamshire **Apr 2025-Present**

3D printing workshop startup to make use of the skills that I have gathered and show the world. Build the engineering experience brick by brick myself.

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.**

(Robotic Autonomous Zimmerframe) RAZ project- £6000 Budget, Hatfield.

Project & Mechanical Systems Lead **Sept 2022-Jan 2024**

Started as a competition, later became a £6000 funded university group project to assist elderly mobility. Although this is informal non-commercial experience, the level of responsibility and work produced is beyond anything that I would see in an internship or placement year. In the end, we did have to cut the project short as we wanted to redirect our efforts to our final year projects.

- Led the entire project with minimal University staff involvement
- Oversaw concept and mechanical design, recruitment, and purchasing
- Individual subprojects include:
  - Lifting mechanism design.
  - Planar movement mechanism.
  - Pressure matrix using Velostat.

The University of Hertfordshire, Hatfield, Hertfordshire

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.

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