SHUBAN SINGH SINGRAUR

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PROFILE

Curious, problem-solving Aerospace Engineering student at Queen's University Belfast seeking a mechanical engineering placement year. Hands-on composites experience at Gurit, including vacuum resin infusion, diagnosing and fixing manufacturing defects, ASTM and ISO testing, and laminate FEA. Works well in a team, most recently leading mechanical design and data analysis on a five-person university hill climb project. Proficient in SolidWorks, structural calculations and Power BI, and eager to bring design, manufacturing and materials skills to lightweight aircraft structures.

EDUCATION

Queen's University Belfast — Belfast, UK
BEng Aerospace Engineering — Sep 2025 – 2028

- **Classification:** 69% achieved to date | Relevant Coursework: Aerodynamics, Aircraft Design, Solid Mechanics, Fluid Mechanics, Materials & Manufacturing
- **Reigate Grammar School** — Riyadh, Saudi Arabia
  A-Levels: Physics, Chemistry, Mathematics — Aug 2023 – Aug 2025

WORK EXPERIENCE

Gurit Wind Private Limited — Chennai, India
Research & Development Intern — Jun 2026

- **Requirement Translation:** Translated consumer requirements into measurable lab tests to assess large-scale manufacturing viability.
- **Composite Manufacturing:** Executed vacuum resin infusion (VARTM) on a 200 × 200 mm glass-fibre laminate, from resin calculation to oven cure. Diagnosed air bubbles and an uneven flow front.
- **Mechanical Design & FEA:** Simulated an 8-ply laminate in FEA under a 100 N cantilever load, with peak stress of approx. 224.5 MPa at the clamped root.
- **Material Testing:** ASTM C297 tensile tests on balsa (16.5 MPa max stress). ISO 844 compression showed epoxy-infused balsa yield at 14.88 MPa versus 1.21 MPa for PET foam, about 12× the load capacity.

HCLTech — Remote
Data Analyst Intern — Aug 2026 – Sep 2026

- Engineered a multi-page Power BI dashboard using Power Query and custom DAX measures to model complex workforce operations and headcount distribution for 1,470 employees.
- Delivered actionable insights for workforce optimization by tracking a 28.3% utilization rate, identifying 3 at-risk projects out of 9 and evaluating departmental attrition metrics.

TECHNICAL PROJECTS

Hill Climb Vehicle Engineering — Queen's University Belfast
Lead Mechanical Designer & Data Analyst — Jan 2026 – Mar 2026

- Evaluated empirical performance logs across RWD, FWD, and AWD prototypes, culminating in a 24:1 worm gear reduction that successfully negotiated gradients up to 50°.
- Collaborated within a 5-member engineering team to establish structured decision matrices and testing plans, using performance data to move the design from speed-biased to torque-biased under physical constraints.
- Modeled and simulated a motorized vehicle in 3D CAD to evaluate mass distribution, structural bracing, and drivetrain efficiency.

Quadcopter Drone Assembly — Independent CAD Project
Mechanical Design Lead — Oct 2025 – Dec 2025

- Modeled and assembled a multi-rotor quadcopter airframe in SolidWorks, performing structural hand calculations and FEA to optimize stiffness-to-weight ratio and mass distribution.
- Evaluated structural materials including carbon fiber, aluminum 6061 alloy, polycarbonate, and POM acetal copolymer, conducting tolerance analyses and producing 2D drawings.

SKILLS, HOBBIES & INTERESTS

Technical Skills: SolidWorks, Structural Hand Calculations, Finite Element Analysis (FEA), 2D Technical Drawings & GD&T, Mould Tooling Concepts, Power BI, DAX, Power Query, 3D Printing/Prototyping, Vacuum Resin Infusion, Vacuum Bagging

Materials & Testing: Glass-Fibre Composites, Carbon Fiber, Epoxy Resin Systems, Core Materials (Balsa, PET Foam), Structural Compression Analysis

Languages & Interests: English (Fluent), Hindi (Native) | Engineering project delivery, sustainable construction and infrastructure, additive manufacturing, renewable energy systems, scale modeling