Prashil Raj Shrestha

+44-7436598751, prashilrajshrestha@gmail.com
28 Buxton Road, DT4 9PJ, Weymouth, England

PERSONAL STATEMENT

Detail-oriented Mechanical Design Engineer with over 5 years of experience in mechanical system design, analysis, and testing—particularly in high-precision electro-mechanical assemblies. Proficient in CAD modeling (NX, SolidWorks, Fusion360), structural/thermal FEA (ABAQUS, ANSYS), and simulation-driven development. Proven track record in developing mechanical interfaces, performing design validation, and coordinating cross-functionally to solve complex mechanical and thermal challenges. Passionate about sustainable engineering, lightweight structures, and product development for next-gen electric propulsion systems.

SKILLS AND TOOLS

- CAD & Rendering Software: NX, SolidWorks, Fusion360, Keyshot, Visualize,
- Programming: Python, MATLAB and Simulink
- Simulation & Analysis: FEA using ANSYS Structural, Abaqus and CFD using Fluent
- Manufacturing: CNC machining, 3D printing, sheet metal fabrication, Casting
- Metrology: Tolerance stack-up analysis, GD&T, inspection using CMM
- Project Management: DFMEA, SFMEA, Root Cause Analysis (RCA), Odoo, SAP, Teamcenter

KEY ACHIEVEMENTS

- **Publication:** Co-authored peer-reviewed papers on **"Generative design for product development"** and **"Simulation and analysis of investment casting process on Francis turbine runner" (AIP Proceedings 2021).**
- **System Integration:** Led the design and validation of high-precision jigs and fixture tools for calibration and critical settings across multi-functional hardware teams for different modules in SMT printers.

CAREER HISTORY

Mechanical Design Engineer – ASMPT SMT UK Limited: Weymouth, United Kingdom (April 2023 - Present)

- Led a team of 6 engineers from different departments to design and develop high-precision transport module, improving system efficiency by 33% through innovative pseudo 3 stage design which help us to print in the centerstage and park on its first and third stages.Design integrations of bearings, linear guides, motors, ball screws to provide a functional system.
- Performed tolerance stack-up analysis, modal/stress simulations, and developed test setups for deformation/deflection verification of the said conveyor module and jigs and fixtures which allows production to set it to 50microns accuracy. Worked with R&D tech and module test to test the conveyor to achieve its system level requirements.
- Worked on Stencil and squeegee automation which helps our customers to load the stencils and squeegee for different products to print, saving time and increasing productivity. Worked in a team to design a latching mechanism that can help any AGV achieve micron level accuracy to automate the product transfer.
- Interfaced with cross-functional teams in procurement, customer service, manufacturing, module test, system, and quality to support design verification and testing cycles. Prepared IDRs, CDRs, technical drawings for different modules.
- Experience aligning with DFM, DFA, GD&T, and structured documentation for IDR, CDR, FMEA, RCA, verification matrices, etc. Supported prototype builds, first article inspections (FAI), and corrective feedback analysis (CMM, non-conformance resolution).
- Collaborated in ESG competitor analysis to benchmark our company standards with our competitor.

Contract Electro-Mechanical Design Engineer – Zyzzle Limited t/a BigSis: Reading, United Kingdom (January 2023 – March 2023).

- Developed a modular egg feeder system for bio-control, combining mechanical design, mechatronics (Duet2D), and CNC machining/3D printing.

- Integrated linear guides, lead screws, stepper motor, and DUET2D rep-rap firmware to control feeding logic to meet the required productivity of producing 10000 samples a day.

Mechanical Design Engineer - Real Time Solutions Private Limited: Dhobighat, Nepal (October 2019 - September 2021)

- Led mechanical design of sensor enclosures, PCB casings, and battery-powered field units for hydrological monitoring systems. Deployed various data loggers, Radar Level Sensors, Audio and visual terminal unit, automatic rain gauges, weather cameras, modular container server stations to 50 different sites in Nepal.
- Design a digital signage (Raspberry Pi) for LED boards and display unit to display the air particulates (AQI) and deployed in different parts of Nepal
- Designed waterproof thermal/mechanical packaging for sensors with in-house prototyping (CNC, 3D printing, casting).
- Developed motorized cableway systems with tensioned guy-wires and structural supports. Used FEA to ensure safety and stability.
- Worked on designing pressure vessels for oxygen generators during covid 19. Designed and developed a system for a 100-bed hospital during 2nd wave of Covid 19. Selection of actuators, compressor, dryer, and pressure vessel design for zeolite and oxygen. Also, helped Dhulikhel Hospital with repairing its PSA oxygen generators.

R&D Engineer (Remote) - ASMI: San Francisco, California, United States (Jan 2020 - July 2020)

• Produced Object Detection, Augmentation and Segmentation of Videos, and In-video 3D product and ad injection to contribute seamless ad experience to end users in turn benefiting both parties.

Research Assistant - Design Lab, Kathmandu University: Dhulikhel, Nepal (March 2019 - October 2019)

- Conducted **Casting Simulation** of 92kW Francis Turbine Runner for Turbine Testing Lab using **ProCAST** and **Autodesk ReCap** photogrammetry.
- Project: "**Drones for medical supplies**". Body engineering and component analysis of drones using **Fusion 360's** Generative design and rapid prototyping using **3D printing**.
- Designed low-cost, 3D-printed prosthetic hands for children in collaboration with e-Nable Nepal.
- Researched sustainable packaging solutions using biodegradable materials.

EDUCATION

MSc in Advanced Mechanical Engineering: Cranfield University, Cranfield, UK (October 2021-September 2022).

- Thesis: Simulated textile-based wearable RF energy harvesting for medical devices.
- Group Projects:
    - Crack propagation analysis in ABAQUS using real test data.
    - Modelling and experimental analysis of 5-junction solar CPV cells with Simulink.
- Percentage: 79.3%

BE in Mechanical Engineering (Design and Manufacturing): Kathmandu University, Dhulikhel, Nepal (October 2015 - October 2019)

- Individual Thesis: **Casting Simulation of a 92kW Francis Turbine Runner** – published a conference paper with verification using 3D printing and lost-wax casting.
- **Percentage:** 73%

CERTIFICATION AND TRAINING

- Fundamental of Machinery Safety (Machinery Directive), Lean Six Sigma training, PLM Training
- Geometrical Dimensioning & Tolerancing to BS 8888 & ISO Standards
- **IMECHE** Membership and pursuing Chartered Engineer status.
- Coursera certification in Python and Aerial Robotics using MATLAB.