Sworaj Bastola

fnt27@txstate.edu | (940) 326-2198

TECHNICAL SKILLS

- Software: **SolidWorks**, AutoCAD, **Python**, Orca Slicer, Microsoft (Excel, Word, PowerPoint), Minitab, MATLAB
- Machining: 3d printing (FDM & SLA), lathe, manual mills, drill press, drill, angles grinder

EDUCATION

Bachelor of Science in Mechanical Engineering May 2027
Texas State University – San Marcos, Texas
Engineering GPA: 3.9
Honors**:** Dean's List (All semesters), President's Honors Scholarship (Fall 2025- Present)
Relevant Coursework: Engineering Graphics (SolidWorks parts and drawing), Mechanics of Material, Material Engineering, Statics, Thermodynamics, Circuits and Devices, Engineering Statistics, Dynamics

EXPERIENCE

Research Assistant, Quality Assurance Mar. 2025 – Present
CH!PS Lab, Texas State University

- Researched, built and operated **ASTM and ISO standard test** to examine tensile, puncture resistance, thermal, sharpness and other properties of objects
- Designed, assembled and programmed various testing apparatus and setup using SolidWorks, 3d printing and Arduino
- Conducted experiments in prescribed conditions, recorded and processed data, created graphs and final report for the product
- Document the endurance tests created to assure tests can be replicated by others or in the future
- 100% completion of tests and report on time for quarterly deadlines.

PROJECTS

Vice-President, Bobcat Aerospace & Rocketry Aug. 2024 – Present

- Build and launched a H class rocket for my L1 certification
- Used SolidWorks to 3d design, model and production using 3d printer for fiberglass resin nosecone molds and various other components for the rocket.
- Designed and build fiberglass rocket body and cone.
- Reached out to 100+ companies for collaboration and funding and received support for 10+ companies

3d Printing team Lead, Chain for Change Jan. 2023 – Aug. 2024

- Designed 3d models that were accessible to the blind and visually impaired.
- Conducted field testing and research to find flaws and places to improve and calculate the effectiveness of the design
- Designed and 3d printed around 50 models of high school course materials to be used by a local special needs educational facility.

High school Research Mar. 2024 – Aug. 2024
St. Xavier's College, Maitighar

- Planned, designed and conducted research to test the quality of drinking water of a newly established water filtration and distribution plan.
- Collected water sample from 100 houses using sterile containers, taking precautions insuring not to contaminate the sample
- Conducted membrane filter test and growing the samples in various cultures to test for E. coli count