

Pinak Bhuban

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EDUCATION

Bachelor of Science in Mechanical Engineering, Minor in Mathematics

Texas Tech University, Lubbock, Texas

Dean's List

August 2019 – May 2023

GPA: 3.0

Spring 2020, Fall 2020

TECHNICAL SKILLS & CERTIFICATIONS

Programming Languages: MATLAB, HTML, CSS, **JavaScript**, React, JS, SWIFT, C++, **Python**, Arduino IDE, Raspberry Pi programming, MySQL, Java, C#, **NI LabVIEW**, PowerBI, Figma

CAD & CAE Tools: CATIA V6, **SolidWorks**, **Siemens NX**, **ANSYS (workbench, fluent)**, Star-CCM+, Open foam, Autodesk Alias, Autodesk **Fusion 360**, **AutoCAD**, **Autodesk Inventor**, Blender, Revit, TinkerCAD, Fritzing, 2D Drafting

Tools: **Power & hand tools** (lathe machine, milling machine, torque wrenches, drilling machine, band saw, grinder, **CNC machining**), tolerancing (**GD&T**), FDM printer, SLA printer, Allevi 3 Bioprinter, electronics, motors, and circuit components, DFM, DFMEA, FMEA

Quality Certification: **Lean-Six-Sigma Green Belt**

Experience

Physical Therapy Device, Texas Tech University, Lubbock, Texas

August 2022 – May 2023

Mechanical Engineer

- Inventing a functional physical therapy device, with a team of **5 senior** engineering students, **solving 3 crucial problems** of knee-related injuries, measured by 0-90 ROM progression and scar tissue repair, achieved by remote control recovery with physicians/ user inputs
- Implementing **4 Six Sigma** principles, creating detailed **SOPs** conducting **customer surveys, and root cause analysis to optimize design and engineering issues** within a production budget of **\$450**, resulting in the MVP being manufactured and tested under 33% of the budget
- Manufacturing a functioning MVP in TTU machine shop using **CAD (Solidworks, Autodesk Inventor)**, **Statistical Tolerance Analysis, FEA(Ansys), DFM/DFA principles**, prototyping and testing 3 parameters(angle/speed of rotation, torque generated, product strength and failure) with 5 variable power input, impact test, tensile test, under 4 different operating conditions
- Creating a control system on Arduino system with 2 control modules (IR and Bluetooth), incorporating 15 electronic components, for serving 3 features ROM training, speed control, and resistance training
- Presenting the product at the URC, DTI, and Senior Design expo at TTU, resulting in getting **awarded** the People's Choice award for innovation by public voting, amongst 100+ competitors; currently in the process of getting **patented**

Society of Automotive Engineers (SAE), Texas Tech University

January 2022 – April 2023

FSAE officer for aerodynamics and body lead

- Facilitating creative decision-making and root cause analysis of **3 aerodynamic problems**, using iterative **CFD**, heat transfer, and **numerical Analysis**, measured by radiator coolant temperature, yielding a 50 % reduction in temperature and 7% in drag
- Manufacturing 4 **SAE rule-compliant composite** parts and assembly implementing **2D drafting, CAD, DFM/DAE, FEA**, and creating detailed SOPs based on previous TTU aerodynamic teams, resulted in saving cost by 21%
- **Leading** and collaborating with 18 technical officers of other car components and 78 student members, which led to a 15% increase in member retention of the organization to the year 2021-22
- Reaching out to 18 prospective composite sponsors, cost optimization with an annual budget of \$4200, implementing **Lean Six Sigma** methodology in recycling and reusing inventory materials, representing the Team in **FSAE 2022, Michigan**

Department of Physics, Texas Tech University, Lubbock, Texas

January 2020 - March 2021

Student Engineer

- Designing and manufacturing a functional inertial confinement D-D Nuclear Fusion Reactor, by measuring the ratio of energy input to output, implementing **GD&T, 3D-modeling, FEA, DFM, power electronics, CFD**, literature search and documentation
- Testing and deriving results with a team comprising 4 researchers, 13 technicians, and a student in a lab and 2 machine shops, on the basis of 3 parameters(portability, input energy, scalability), by applying a hands-on, first principle approach
- The concluding outcome has been generating valuable data on **2 methodologies and limitations** of an inertial confinement fusion reactor, by testing a scalable business model with the project estimated to be over **\$40k** in budget

Relevant Experience

Organic matter printing (Food, organ), Texas Tech University, Lubbock, Texas

August 2022 – May 2023

Student Engineer

- Bioprinting **and prototyping** a nutrient delivery process with custom geometry and texture by using **Allevi 3 and Foodini** bioprinter
- Working 9 hours per week, while taking 21 credit hours semester, under the guidance of Dr. Egan Paul and 2 TAs
- Creating 5 variable geometry prints with 3 distinct layers using multi-material printing (Rice powder, pea protein, mashed potatoes), yielding 2 stable final prints.

Hawx Pest Control Services, St. Louis, Missouri & Chicago, Illinois

January 2022 – August 2023

Sales Manager, Marketing Assistant

- Producing **\$74k** in personal sales revenue within **50 workdays**, resulting in 8% of the total office revenue
- Working **12 hours/day, 6 days/week**, for **3 months**, going door to door, servicing customers
- **Developing websites** for 2 regional offices, aiding lead generation & recruiting by 20%, and regional sales by 100%
- Recruiting and screening plausible candidates, interviewing, and training a **sales team of 45** over 9 months
- Collaborating with a team of 35 sales representatives, 2 mentors/managers, and 15 skilled technicians in the office