Avva Sai Pranav

avva.saipranav@gmail.com

EDUCATION

People's Education Society University, Bangalore *Jul 2018 - Aug 2022*
Bachelor of Technology in Mechanical Engineering CGPA: 7.68/10

TECHNICAL STRENGTHS

Mechanical	Solidworks, Fusion 360, AutoCad, COMSOL, MATLAB, Power tools, 3D Printing
Electronics	PCB design (Easy EDA), SMD soldering, Clewin and Klayout, Embedded systems
Computer Science	Python, Linux (Arch and Ubuntu), Bash Scripts, C/C++, Web Development Processing IDE

WORK EXPERIENCE

Design of navigational grade accelerometer and gyroscope *June 2022 - Present*
Guide: Prof G K Ananthasuresh, M2D2 Lab, Indian Institute of Science
Remodeled and improved the performance of MEMS accelerometers and disk-resonating gyroscopes through electro-mechanical simulations in COMSOL. Fabricated and corroborated the simulated results through testing.

Biomechanical Data Acquisition System *August 2022 - Present*
Translead MedTech Private Limited, Electronics Consultant
Designed a distributed system combining EMG and IMU sensors to measure human bio-mechanical activity. This system assessed the effectiveness of the company's customizable, user-specific assistive chair against existing solutions during sit-stand motions.

Embedded System Development for Micro Mobility Vehicle *Dec 2021 - May 2021*
Delta-X Automotives Private Limited, Embedded System Designer
Worked on embedded systems to implement a secure, biometric-locking mechanism to improve user experience. Ensured the seamless integration of electro-mechanical subsystems and established efficient version control of software across departments.

Building a Test Tube Sorting Machine *September 2021 - December 2021*
Guide: Prof. Sethuram D and Anand Diagnostic Labs
Developed and tested an end-effector mechanism for sorting test tubes for diagnostic labs. Implemented computer vision protocols to detect test tube and human limb contours, enabling sorting and ensuring operator safety.

Electronics and Vehicle Dynamics *May 2019 - September 2020*
Team Haya Racing, Formula Student Racing Chapter
Conceptualized and designed instruments for data-driven optimization and verification of physical parameters such as suspension angles and slip angle. Analyzed and proposed manufacturing-oriented modifications for suspension design and testing. Contributed to fiberglass mold manufacturing, lab maintenance and electronics integration.

PROJECTS

Biomimetics of Hummingbird: Analysis of Wing and Kinematic Design (Bachelor's Thesis)
Guide: Assistant Prof. Sachhidananda M H, PES University
Analyzed hummingbird wing articulation and designed an electro-mechanical mechanism to mimic the unique 'figure-8' motion of the wings. Adjusted the flapping frequency to modify the thrust based on the estimated weight of the system.

Wireless Steering Wheel Display
Team Haya Racing, Formula Student Racing Chapter
Designed a detachable steering wheel integrated display and developed a GUI for the display using a Java-based IDE. Set up a wireless CAN data interpretation and transmission from the ECU using MQTT protocol.

Computational Design of Machine Elements
Guide: Dr. Chandrashekara C V, PES University
Simplified the manual calculations of the design of machine elements using MATLAB · Implemented machine elements such as shafts, springs, bevel gears, and helical and worm gears.

PATENTS

- Inventors: Navaz Z., Venkatesh K., Logasrinivasan P., Harit T. and Sai Pranav A. System and Method for a Biometrics-based Operation of Electric Vehicles. Delta X Automotive Private Limited, Indian patent No: 202241046561, filed on 16th August 2022. Patent Pending

TINKERING

Mini DIY 3D Printer
Manufactured a mini 3D printer from scrap wood and CD drives using a 3D printer shield and Marlin firmware.

Trash Can foundry
Repurposed a metal trash can into a portable foundry using cement, metal gauze, and fire-wool.

DIY Battery Eleminator
Upcycled an old desktop power supply into a tunable variable voltage and variable current power supply

EXTRA-CURRICULARS

Model United Nation Chapter of PES

– High commendation award for a conference held in Coimbatore, Tamil Nadu
– Core organizer for an internet-enabled quiz rounds event named "Diplomat Wars"
– Mentoring high school students on the procedure of MUNs and the preparation for the same
– Written articles for the official Instagram handle and website under the initiative "For the Record"

Team Haya Racing

– Designed and coded a brand new team website.
– Mentored 1st-years interning under the team.
– Actively participated in the business plan and management tasks of the team

Cultural Fests

– Ranked 2nd in Rube Goldberg competition in the annual science fest of PES
– Volunteered for the Art Department in 2018 and 2019
– Placed 1st in the Takeshis Castle Challenge of PES