Ashwin Hingwe

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OBJECTIVE

I want to learn how to apply sophisticated engineering principles to real world problems. I am passionate about making mechanical things using rapid prototyping techniques, electronics prototyping, and machining.

EDUCATION

The University of Texas at Austin, Austin, TX - Cockrell School of Engineering *Expected May 2024*

BSE Mechanical - Mechatronics and Robotics Path, Elements of Computing Certificate

Relevant Coursework:

Dynamics, Thermodynamics, Materials Engineering, Linear Algebra, Vector Calculus, Differential Equations, Data Structures and Algorithms, Engineering Numerical Methods, Dynamic Systems and Controls, Advanced Mechatronics

EXPERIENCE

Mechanical Engineering Intern, Intuitive Surgical *May 2023-August 2023*

- Designed, built, programmed and tested a robot for industrial automation
- Investigated and tackled reduction of waste from automation

Mechanical Engineering Intern, Intuitive Surgical *May 2022-August 2022*

- Designed and performed experiments to characterize surgical instrument mechanisms
- Analyzed data to assist with performance consistency review for a surgical instrument
- Designed and prototyped a testing fixture for surgical instruments

President, UT Austin Makerspace (Texas Inventionworks) *March 2020 – May 2022*

- Advised, supervised, and trained 5000 students/year for operation of laser cutters, 3D printers, and CNC mills
- Instated design review process for manufacturing; Resulted in a culture that encourages optimized design
- Learned onboarding, training, maintenance, and scheduling; Developed ground-up maintenance procedures for 3D printers and training templates for all machines

Undergraduate Researcher, Reneu Robotics Lab (Professor Ashish Deshpande) *March 2020 – Present*

- Designed, Fabricated, and Assembled variable stiffness robotic finger for dexterous manipulation (Invented by grad student – Mincheol Kim)
- Designed and fabricated force sensor mounts to measure fatigue of patient in upper body exoskeleton
- Learned Fundamentals of Robotic Mechanism design

PROJECTS (https://ashwinh9.wixsite.com/mysite)

- **LED Dot Matrix Controller (Summer 2019):** Developed hardware and software to control 5x7 LED matrix and display scrolling text. (https://github.com/AshwinPH/LED-Matrix-Driver)
- **Custom Dice (Winter 2019):** Designed and fabricated dice with SLA printers, resin casting, and machine tools
- **Voron 0 3D printer Build (Summer 2022):** Soured, assembled, and customized a CoreXY FDM 3D printer
- **Autonomous Basketball-playing Robot (Fall 2022):** Designed and built a robot for class competition in a team
- **Firebot (Fall 2022):** Designed, fabricated, and assembled propulsion subsystem for a firefighter assistive robot. (https://www.thefirebot.com/)

SKILLS

Technical /Computer Skills:

- Proficient with Autodesk EAGLE, Solidworks, Fusion 360, programmable microcontrollers (Arduino)
- Experienced with FDM and SLA 3D printers, laser cutters/engravers, desktop CNC machines
- Comfortable with circuit design and soldering
- Comfortable with machine shop tools (Mill, Lathe, Bandsaw, Drill Press, etc)
- Basic epoxy resin and rubber casting skills
- PLC programming

Languages: C, Java, Python, MATLAB, javascript