Ashwin Kuppahally

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EDUCATION

The University of Texas at Austin — Austin, TX

Bachelors of Science, Electrical & Computer Engineering and Biomedical Engineering — *May 2027*

- Coursework: Computer Architecture, Circuit Theory, Systems Design, Network Analysis, Biomedical Design
- GPA: 3.8/4.0

EXPERIENCE

Electrical Engineer — Dec 2024 – Present

Advanced Robotic Technologies for Surgery Laboratory - Texas Robotics — *Austin, TX*

- Designed power management PCBs for robot battery control with I2C communication
- Developed camera module PCB for robotic surgery use
- Validated and tested circuit boards using electrical lab equipment
- Sourced components and setup turnkey manufacturing of circuit boards, cutting costs by 50%

Electronics Design Engineer — Aug 2024 – Present

Longhorn Racing Electric — *Austin, TX*

- Created and manufactured PCB for charging 600V car battery
- Designed custom boost/buck converters for power delivery
- Wrote embedded software enabling car power systems and CAN and ISO communication
- Modeled car charger box assembly in Solidworks

Electronics Design Research Intern — Dec 2022 – Sep 2023

Stanford University Medical Research — *Palo Alto, CA*

- Created direct brain interface PCBs for mice neural stimulation experiments
- Designed and manufactured experimental microscope for imaging neurons
- Presented work to researchers and iterated designs

Education Assistant — May 2023 – Aug 2024

Maker Nexus — *Sunnyvale, CA*

- Taught over 500 elementary school children STEM classes in electronics, 3D design, and woodworking
- Design curriculum for summer courses
- Served underprivileged communities with free classes and events

PROJECTS

Blood Assay Analysis Device | *KiCad, Solidworks, Ansys, Festo Fluid Dynamics* — March 2024 – Present

- Designed ground up blood analysis device to test assays of at-home hemodialysis patients
- Created high-power PCBs to perform light analysis of blood samples
- Modeled microfluidic components in Solidworks for blood movement and performed fluid analysis

AI Powered Wearable Training Device | *KiCad, Solidworks, 3D Printing, Arduino* — May 2023 – Sep 2023

- Designed wearable smart device with custom PCB and sensors with Bluetooth telemetry connectivity
- Utilized deep learning model to make estimates of VO2 max based on blood oxygen and heart rate
- Modeled 3D printed housing in Solidworks and manufactured device out of composite materials

Carbon Flux AI Model | *TensorFlow, Keras, Anaconda* — Dec 2020 – Jan 2022

- Created algorithm in Python to predict carbon flux using environmental data and historical trends
- Utilized neural network and advanced data sourcing to perform analysis
- Research completed with the Environmental Engineering Department at NASA

Other projects: ashwink.org/projects

TECHNICAL SKILLS/ACHIEVEMENTS

Skills: PCB design, CAD (Solidworks), embedded systems software, Spice, Verilog, wireless chip communication/telemetry, circuit analysis, metal CNC, 3D printing, electronics manufacturing, finite element analysis, fluid dynamics, structural design, composite materials, Python, MATLAB, C++, data analysis, machine learning

Achievements: Synopsys Research - *4th Place in state*, USAYPT - *Schwartz Award*, FRC Robotics - *Engineering Award+International Qualification*, TEAMS - *National Qualification*