

Shashank Shekhar

Graduate student
University of California, Riverside

+1-(951)573-1954
sshek014@ucr.edu
linkedin.com/in/shashank-shekhar
shashankshekhar.tech

EDUCATION

Master of Science, Robotics (Embedded Platform & System Design)
University of California Riverside, CA, US

September 2024 - Present

Bachelor of Technology, Electronics & Communication Engineering
Sharda University, India

August 2018 - August 2022

TECHNICAL SKILLS

- **Software's:** KiCAD, Altium Designer, LT Spice, Solidworks, Arduino IDE, Platform IO, VS Code, Ultimaker Cura.
- **Programming Tools:** C/C++, Python, MATLAB/Simulink.
- **Hardware Skills:** Circuit debugging; Soldering (THT/SMD), PCBA & rework; 3D Printing, Machining & Power Tools.

EXPERIENCE

- **Orangewood Labs (YC-18)**

May 2023 - Aug. 2024

Electronics Engineer

- Designed multi layer STM32-based PCBs for various electronics subassemblies, with expertise in working with hardware interface for protocols such as GPS, Wi-Fi, Bluetooth, CAN Bus, SPI, I2C, UART, USB, RS 232 and RS 485.
- Developed ARM-based controllers for high-power B.L.D.C. based robotic joint actuators with torque, position and velocity control capabilities, integrated with electromagnetic brakes and communication protocols such as CAN Bus and RS485.
- Analyzing and troubleshooting electronic sub-assemblies in 6-axis robotic arms to identify and resolve issues that arise during operation and malfunction.

- **Triassic Aerospace**

Nov. 2022 - March 2023

Mechatronics engineer

- Oversee drone fabrication, prototyping, and electrical testing for optimal performance and quality control.
- Design, fabrication and firmware testing for BLDC motor controllers and ARM Based Flight controller boards.

PROJECTS

- **nanoDriveV1.0 - BLDC motor driver with F.O.C.**

July 2023 - In Progress

Personal Project

nanoDriveV1.0

- * A custom control board for B.L.D.C. (40V max & 10A max) utilizing the F.O.C. algorithm. The current version has undergone significant optimization, adhering to PCB design rules.
 - * Implementing control loops for executing diverse motion trajectories to demonstrate a universal joint controller.
 - * Enabling communication between controllers via ESP-NOW with minimal wiring.
- **Upper Limb Exo-suit for Motion Amplification and Medical Rehabilitation**

Jan 2022 - May 2022

Academic Project

Youtube

- * The objective of this project was to create an electromechanical system that augments upper limb mobility, with dual purposes of aiding industrial applications and serving as a tool for medical rehabilitation using EMG sensors.

- **Low-Cost B.L.D.C. Actuator Fabrication using 3D Printing**

Jan 2021 - Jan 2022

Academic Project

Youtube

- * Created an affordable, adaptable robotic joint actuator, including a key element of testing the reliability and feasibility of 3D-printed planetary gearboxes in high-speed maneuvers.

FIELD OF INTEREST

My areas of interest includes Embedded Hardware Design, 3D Modeling, Actuator Systems, Legged and Mobile Robotics, Manipulator Arms, Electric Vehicles and Embedded Systems.

CERTIFICATIONS

- **Introduction to Biomedical Engineering** Coursera
- **Understanding Research Methods** Coursera
- **Generative Design for Part Consolidation** Coursera
- **CSWA – Mechanical Design** Dassault Systèmes

ACHIEVEMENTS/AWARDS

- Awarded Chancellor's gold medal for **Best Student Innovator** of Sharda University. (Oct. 2022).
- Granted Design patent of **3D Printed Brush-less D.C. Motor Actuator** published in Indian Patent Journal (May 2022).

MISCELLANEOUS

Hobbies: Cooking, D.I.Y. Projects, Trekking.

Languages: English, Hindi.