# ROHIT BANGAL

rohitbangal.rb@gmail.com• (412) 657-7150 • https://www.linkedin.com/in/rohitbangal • https://rohit-bangal.github.io/

ELECTRICAL ENGINEER WITH EXPERTISE IN HIGH-SPEED MIXED-SIGNAL EMBEDDED SYSTEMS, AND PCB DESIGN, WITH HANDS-ON EXPERIENCE IN BOARD BRING-UP, VALIDATION, AND SYSTEM INTEGRATION

## EDUCATION

**Carnegie Mellon University** Pittsburgh, PA

Master of Science in Electrical and Computer Engineering, Applied Program – QPA: 3.95/4.00 May 2024

- Honors: Eta Kappa Nu (HKN) Honor Society
- Coursework: CubeSat Design-Build-Fly Lab, Space Robotics, Machine Learning for Signal Processing

**Government College of Engineering and Research, Savitribai Phule Pune University** Pune, India

Bachelor of Engineering in Instrumentation and Control – GPA: 8.83/10.00 April 2020

## PROFESSIONAL EXPERIENCE

**Matic Robots** Mountain View, CA

- **Electrical Design Engineer** February 2026 - Present
  - Design end-to-end PCBs for robotic subsystems with SoCs, MCUs.
  - Troubleshoot and root cause electrical issues on robots to find a short term and long term solutions.

**Monarch Tractor** Livermore, CA

- **Electrical Engineer** June 2024 – January 2026
  - Designed and validated **high-speed, multi-rail embedded compute boards**, including **MIPI/GMSL camera subsystems, power delivery, and sensor interfaces**; performed board bring-up, SI/PI analysis, and hardware debug using oscilloscopes, logic analyzers, and protocol analyzers.
  - Led the electrical engineering scope for **3+ OEM partnership projects** from concept to launch, owning system architecture and **collaborating with mechanical and firmware teams** on autonomous hardware bring-up, HV battery systems, OBC, and peripherals.
  - Extensive hands-on lab experience includes bring-up, debug, validation, and hardware test automation.
- **Intern (HV Battery Electrical System)** June 2023 - August 2023
  - Designed a **Battery Module Tester** for defect detection in Cell Modules before installation in the HV Battery Pack. Eliminated the need for two manual laborers and reduced inspection time by 80%

**Tantradnyan Engineers** Ahmednagar, India

- **Project Engineer** April 2020 - November 2022
  - Led 3-member team; Cut production time by 20% through workflow optimization.

## SKILLS

**Hardware:** High-speed PCB Design, Mixed-Signal Circuit Design, Schematic Capture, layout design; Microcontrollers (AVR, ST, ARM), sensor & camera subsystems; SerDes, Sensor Interfaces (ADC/DACs), PMICs, DC-DC converters, rail sequencing; Board Bring-Up, Validation Testing, Lab Test Equipment (scopes, digital analyzers etc.), Debugging
**Software/Interfaces:** Altium, KiCAD, LTSpice, High-speed (MIPI-CSI, GMSL), Low-speed (I2C, SPI, UART, CAN, JTAG), USB-C PD, Python scripting for validation tools, automated test workflows, and lab data processing
**Programming Languages:** Python, Embedded C; **Languages:** Fluent - English, Hindi; Native - Marathi

## LEADERSHIP EXPERIENCE

**Team Leader, Robotics Research Lab, Government College of Engineering and Research** Pune, India

- **Led 35-member robotics team** across **national competitions**, boosting productivity by 20%**.**
- Awarded with Special Jury Award among 80 participants teams in ABU Asia-Pacific Robot Contest 2019.

## PUBLICATIONS

- "**Design and Control of Omnidirectional Conveyor Model Using Image Processing**," - **IEEE**
- "**Design and Control of Quadruped Robot along with Machine Vision based Path Planning**," – **IEEE**
- **"Path Planning and Controlling of Omni-Directional Robot Using Cartesian Odometry and PID Algorithm," - IEEE**

## ACADEMIC PROJECTS

**Smart Grid** September 2019 – May 2020

- Implemented Google Firebase cloud to control grid (mobile app and website); Used Allen Bradley PLC and SCADA

**Rugby Ball pick-place and kick Robots** August 2019 – June 2020

**Smart Street** January 2019 – March 2019

- Decreased energy usage up to 50%; Implemented vehicle speed-based retracting speed breaker.

**Autonomous Quadruped Robot** August 2018 – June 2019

- Designed and built robot for ABU Robot Contest 2019 with vision-based path planning, obstacle avoidance

**Pick and Place Automatic Guided Robot - Mahindra & Mahindra Engine Plant** November 2019 – December 2019

- Used high-resolution encoders and an IMU for position and orientation feedback

**Calendar based Energy Management System - Mitsubishi Electric Cup** September 2018 – February 2019

- Developed Energy Management System for HVAC and Lighting: Decreased energy consumption by 10%