

# Swapnil Meshram

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## EDUCATION

**Master of Science, Robotics and Autonomous Systems (Electrical Engineering)** **Expected December 2024**  
Arizona State University Tempe, Arizona  
GPA: 3.64/4.00

**Bachelor of Engineering, Electronics Engineering** **May 2020**  
K. K. Wagh Institute of Engineering Education and Research Nashik, India  
CGPA: 6.48/10

## EXPERIENCE

**Miniaturized and Advanced Power Electronics Laboratory: Research Aide** **February 2023 – September 2023**  
Arizona State University Tempe, Arizona

- Developed Printed Circuit Boards for planar transformers with medium-voltage isolation ratings of 26kV, 35kV, and 48kV.
- Engineered multi-layer PCB designs (2, 4, 6, 10, 12, 14 layers), optimizing for project specifications.
- Collaborated with Ph.D. students to evaluate and optimize designs, ensuring alignment with project goals.
- Diagnosed and resolved technical challenges in PCB design, contributing to successful project completions.

**Aerospace Engineers Private Limited: Electrical & Electronics Engineer** **June 2021 – December 2022**  
Autonomous & Undersea Systems Division Tamil Nadu, India

- Led R&D for marine robotic vehicles in the Autonomous & Undersea Systems Division, achieving significant cost savings and project management improvements.
- Devised high-level electrical architecture for unmanned marine vehicles, including AUVs (rated for 300 meters depth), ROVs, and ASVs.
- Designed embedded electronics from concept to prototype, including hardware selection, schematic and PCB design, board bring-up, and system integration.
- Created system interconnect diagrams and defined wire harnesses, ensuring seamless subsystem connectivity.
- Collaborated with cross-functional teams to integrate custom-designed hardware, sensors and communication systems, successfully building marine robotic vehicles from scratch.
- Facilitated cross-team collaboration throughout the product development lifecycle, including design reviews, testing, debugging, and documentation.

## ACTIVITIES/ AFFILIATIONS

**Team Vector: Electrical Subsystem Lead** **September 2017 – August 2019**  
K. K. Wagh Institute of Engineering Education and Research Nashik, India

- Managed and collaborated with a 40-member robotics team for ABU Robocon India, a pan-Asian robotics competition.
- Conducted design, manufacturing, testing, and integration of power and logic interfaces for manual and autonomous robots.
- Secured All India Rank 9 in the virtual round of ABU Robocon 2019, showcasing exceptional teamwork and technical proficiency.

**Team Nikola Racing: Technical Team Member** **March 2019 – June 2019**  
K. K. Wagh Institute of Engineering Education and Research Nashik, India

- Led the development of a 100-kilometer range electric motorcycle, collaborating with a 20-member interdisciplinary team.
- Designed and implemented a battery pack with Lithium-titanate cells, enabling 20-minute charging and 8+ years battery life.

## TECHNICAL SKILLS

**Engineering Tools:** Altium Designer, Autodesk Eagle, KiCAD, LTspice, MATLAB, Ansys Maxwell

**Programming Languages/ Frameworks:** Python, C, MATLAB, ROS, PyTorch, TensorFlow

**Proficient:** Printed Circuit Board Design, Circuit Simulation, Schematics, Research and Development (R&D), Sensors, Robotics, Embedded Systems