Swapnil Meshram

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EDUCATION

Master of Science, Robotics and Autonomous Systems (Electrical Engineering) **Expected December 2024**
Arizona State University, Tempe, AZ *GPA: 3.64/4.00*
Relevant Coursework: Introduction to Deep Neural Networks, Embedded Machine Learning, Power Electronics & Power Management, Connected and Automated Vehicles, Realtime DSP

Bachelor of Engineering, Electronics Engineering **May 2020**
K. K. Wagh Institute of Engineering Education and Research, Nashik, India *CGPA: 6.48/10*
Relevant Coursework: Electronic Devices & Circuits, Advanced Power Electronics, Automotive Electronics, Embedded Processors, Electromagnetics & Wave Propagation

TECHNICAL SKILLS

Hardware and Software Development Tools: Altium Designer, Autodesk Eagle, KiCAD, LTspice, Simulink, Ansys Maxwell, Google Colab, Anaconda, Jupyter Notebook, Visual Studio Code, Git
Programming Languages: Python, C, Embedded C, MATLAB
Libraries & Frameworks: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, PyTorch, TensorFlow

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 efforts in developing marine robotic vehicles (AUVs, ROVs, ASVs), achieving a project cost reduction of 15% through optimized designs and efficient project management practices.
- Developed high-level electrical architecture for unmanned marine vehicles, including AUVs rated for 300 meters depth, ensuring robustness and system reliability.
- Designed the Power Distribution and Sensor Suite for unmanned marine vehicles (AUVs, ROVs, ASVs), increasing endurance by 10% and compacting wiring length by 30%.
- Created the Thruster Control Board for a Micro class submarine, increasing endurance by 5% and eliminating active cooling requirements.
- Designed embedded electronics systems from concept to prototype, covering hardware selection, schematic design, PCB layout, and system integration.
- Led cross-team collaboration through design reviews, testing, and debugging, ensuring all project milestones were met ahead of schedule.

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.