Maheep Bhatt

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Summary

Goal-oriented and highly motivated engineering student seeking an internship in power electronics applications in automotive technology at General Motors. Has over two years of relevant power electronics experience in industry and research projects and has consistently demonstrated the ability to thrive in fast-paced, dynamic environments while delivering significant, meaningful results. Passionate about advancing sustainable, high-performance solutions in the automotive industry.

Education

Ph.D. Electrical Engineering, University of Wisconsin-Madison *January 2024-Present*
Advisor: Dr. Bulent Sarlioglu

M.S. Electrical Engineering, University of Wisconsin-Madison *2021-2023*
Courses: Solid-state power conversion, Introduction to electric drive systems,
Power electronics circuit, Computer Modeling, and Simulation of autonomous vehicles and robots

B.S. Electrical and Electronics Engineering, Vellore Institute of Technology, Chennai, IN *2017-2021*

Skills & Expertise

Programming Tools: MATLAB, Arduino IDE, Py Chrono
Software tools: LT spice, MATLAB-Simulink, PSIM, PLECS, SIMBA, Altium Designer
Soft skills: Course development, Team management, Oral and poster presentation, Project leadership

Experience

Research Assistant and Teaching Assistant *2023-Present*
WEMPEC (Wisconsin Electric Motors and Power Electronics Consortium)
University of Wisconsin-Madison, WI

- Fabricated and tested gate drivers for GaN bidirectional switches
- Evaluated performance of GaN bidirectional switches
- Developed fault detection techniques for Current Source Inverters (CSIs)
- Performed comparisons of VSI and CSI for traction drive applications
- Instructed industry professionals in short courses offered by UW-Madison

R&A Power Electronics Intern *May 2025- August 2025*
Ford
Dearborn, MI

- Led simulation-based design and analysis of a CSI and a single-stage buck-boost inverter
- Conducted double pulse testing of the SiC switches

Inverter System Design Engineering Student May 2022 – December 2022
Magna Powertrain
Troy, MI

- Designed Passive and Active discharge circuits for ongoing projects
- Calculated conduction and switching losses for the power module
- Acquired knowledge of different inverter components and their applications
- Utilized Altium to craft 2D schematics for Interface and Deskew fixture boards

Summer Intern May 2019 – June 2019
Siemens R&D Department of Mobility
Mumbai, India

- Analyzed components manufactured by SIEMENS, including Audio frequency track circuits, Axle counters, and point machines used by India Railways
- Developed and studied circuits for signal interlocking systems utilized by Indian railways on tracks

Publications

Reduced-Order Modeling of PM Motors for PWM Loss Estimation in VSI, T-type MVSI, and CSI Drive
Authors: Immanuel Williams, **Maheep Bhatt**, Bulent Sarlioglu, Thomas M. Jahns
ECCE 2025

Design Optimization and Validation of the Hybrid Upper H-Arm Suspension link of a BAJA All-Terrain Vehicle using Finite Element Analysis and Accelerometer Validation Setup
Authors: **Maheep Bhatt**, Wedyn Noronha, Nimmagada Sree Nigam Aditya
International Journal of Scientific Research in Engineering and Management 2021

Design of 3D Printed Integrated Leg Flap System and Embedded Control for Amphibious Hexapod with provision for Piezoelectric Energy Harvesting
Authors: **Maheep Bhatt**, Wedyn Noronha, Nimmagada Sree Nigam Aditya
International Research Journal of Engineering and Technology 2021

RESEARCH PROJECTS

Comparison of VSI and CSI for traction drive applications.

- Simulation closed modeling of the three inverters.
- Double pulse testing of the switch for both inverters.
- Loss modeling of Voltage Source Inverter and Current Source Inverter.

Performance evaluation of GaN Bidirectional Switches

- Understood the working of the Gate driver circuit for GaN Bidirectional Switches from Infineon.
- Designed and fabricated the Gate Driver circuit for the BD switches.
- Performing tests for the circuit for the BD switches.

Fault Detection for Current Source Inverters

- Objective: Prevent the open circuit faults in current source inverters

Front-end DC-DC Converter for Current Source Inverters

- Reducing the voltage stress across the front-end DC–DC converter switches by half, thereby improving the overall efficiency of the combined front-end DC–DC converter and CSI system.

Professional Membership

- Institute of Electrical and Electronics Engineers (IEEE) *2021-Present*