Soham Manjrekar

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Education

Georgia Institute of Technology GPA: 3.62/4.0

Master of Science in Electrical Engineering *Aug. 2024 – Dec. 2025*

- Chair, IEEE Power & Energy Society Student Chapter

University of Illinois Urbana-Champaign

Bachelor of Science in Electrical Engineering, Hoeft Technology and Management Minor *Aug. 2020 – May 2024*

Experience

Graduate Research Assistant Aug. 2024 – Present

Georgia Institute of Technology – Center for Distributed Energy (CDE) *Atlanta, GA*

- Advisor: Dr. Deepak Divan
- Research focused on designing, modeling and prototyping grid-connected inverters integrating distributed energy resources to be rapidly adopted and scaled for digitalization, decentralization, and decarbonization

Undergraduate Research Assistant Aug. 2023 – May 2024

University of Illinois Urbana-Champaign – Power and Energy Group *Champaign, IL*

- Advisor: Dr. Arijit Banerjee
- Research conducted to analyze, and experimentally characterize transformer core losses when excited by a wave of multiple frequencies

Electrical Engineering Intern May 2023 – Aug. 2023

Northrop Grumman - Mission Systems *Baltimore, MD*

- Simulated interference signals to test the Electronic Weapons (EW) system aboard the EA-18G Growler platform
- Built and implemented DVT tests to verify performance of the EW system

Electrical Engineering Intern May 2022 – Aug. 2022

Black & Veatch *Overland Park, KS*

- Conducted a Lightning Arrester Site Survey, traveling to 10+ substations to assess the arresters thermal congruity
- Performed a physical design for Lightning Arrester Replacement, with delivery to client

Electrical Engineering Intern May 2021 – Oct. 2021

American Battery Solution *Lake Orion, MI*

- Developed an automated system to report simulated requirement testing and validation of battery packs in an ETAS LABCAR with Python scripts

Publications & Patents

[1] Deepak Divan, Joseph Benzaquen, and Soham Manjrekar. *Automatic Integration of PV Solar Energy into Multiport Dual Active Bridge Converter-Based EV Chargers*. Provisional Patent Disclosure, Georgia Institute of Technology. Filed June 24, 2025. 2025.

[2] Ruomu Hao et al. "A Multiport Bidirectional HF-Link Split-phase DC/DC/AC Universal Minimal Converter". In: *IEEE Energy Conversion Congress & Expo (ECCE)*. Submitted and accepted for presentation. 2025.

[3] Soham Manjrekar et al. ""AC Cube": A Single-Stage PV/Battery/Grid Energy Router". In: *2025 IEEE Energy Conversion Congress & Exposition Asia (ECCE-Asia)*. Bengaluru, India, 2025, pp. 1–6. DOI: 10.1109/ECCE-Asia63110.2025.11111930.

[4] Navami Prabhu et al. "Solar Plug – Universal Off-Grid Microconverter for Low-Cost Tier-1-4 Energy Access". In: *IEEE International Decentralized Energy Access Solutions (IDEAS) Conference*. Presented. 2025.

Awards

Frank C. Mock Scholarship Dec. 2023

- This scholarship is given in honor of the Frank C. Mock family to be used to help top ECE students

Grainger Power Engineering Award May 2024

- To reward highly qualified and well-motivated undergraduate and graduate students who have chosen to pursue a field of study in electric power engineering

Technical Skills

Design: MATLAB/Simulink, PLECS, LTSpice, Cadence Allegro, ORCad, KiCad, Fusion 360
Languages: Python, C/C++, SystemVerilog, JavaScript, HTML/CSS, R
Developer Tools: Git, VS Code, Quartus, Eclipse