

# SUSHANT PADHYE

Cincinnati, Ohio | (513) 886-9975 | padhyesm@mail.uc.edu | [LinkedIn](#) | [GitHub](#) | [Google Scholar](#)

Availability: Internship – Spring/Summer 2025

## Education

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### Bachelor of Science, Electrical Engineering, Honors

Graduating 2027

University of Cincinnati, Ohio

GPA: 3.5 / 4.00

2022-2023 Research of the Year Award (College of Engineering), Herman Schneider Best Paper Award (Protégé Symposium), Dean's List, MakeUC 2023 (Hackathon) Organizer

## Skills

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- Proficient in Python, CAD, Verilog/FPGA, LabVIEW, MATLAB, VBA, AWR RF/Microwave Simulation, Qiskit.
- Experienced in superconducting device design & testing, condensed matter physics, electronics instruments drivers and automation programming, cryogenic testing, network analysis, data mining, python package development.
- Relevant coursework includes digital design, semiconductor physics, cleanroom fabrication and programming.

## Experience

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### Undergraduate Research Assistant, University of Cincinnati

Aug 2022 – Present

URA for Dr. Mikheev, Superconducting nanoelectronics lab

#### Protégé Undergraduate Research Internship and Undergraduate Research Co-op Fellowship:

- Designed various patterns like TLM, Hall bars with experimental fabrication procedures, interdigitated capacitors, superconducting microwave resonators in KLayout.
- Supported fabrication procedures for chips used (Nb/Ta thin films: Sapphire/SrTiO<sub>3</sub>) and tested the chips to determine material properties and predict critical temperatures for superconducting.
- Utilized probe station, cryostat, and dilution refrigerator for cryogenic experiments with resonances, sheet resistance against temperature or magnetic field etc.
- Wrote and documented software drivers for LCR meters, VNAs, oscilloscopes and dilution refrigerator control unit.
- Published python package for the lab on PyPi with detailed documentation on GitHub.
- Completed certification for UC's cleanroom through a micro credential course offered by OASIS.
- Acted as Assistant Supervisor in a High School Outreach Program and gave them exposure to a lab environment.

URA for Dr. David Reeping (Asst. Prof., Department of Engineering and Computing Education)

#### NSF SUCCESS Project:

- Collaborated with a team of 9 researchers and mentors to translate Plans of Study (POS) for engineering curricula across the US into a standardized format.
- Analyzed MIDFIELD dataset to compare student trajectories with codified POS.
- Made data entry more streamlined with Python codes and web scraping, coded programs to validate the entered data.
- Co-authored research papers to disclose research findings and data collection procedures (see Google Scholar).

### Planning Engineer Co-op, Duke Energy

Aug 2023 – Dec 2023

Midwest (Ohio – Kentucky) Grid Planning Team

- Contributed to the implementation of grid segmentation and self-optimization strategies, bolstering reliability, and ensuring continued service delivery to the maximum number of customers possible.
- Leveraged tools such as ARGUS, CYME etc. in conjunction with internal tools and grid data to strengthen grid integrity.
- Collaborated with various teams within the company to achieve project goals and ensure proper planning.

### Supplemental Instruction Leader, University of Cincinnati

Jan 2023 – Apr 2023

- Physics Department, College Physics 1: Assisted faculty during class and conducted biweekly teaching sessions to revise the concepts taught in lectures, work on related conceptual problems, and review concepts before exams.