

# RISHIN PATRA

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As an electronic engineer, I design embedded analog and digital circuits and create custom PCB designs. Passionate about electronics, I enjoy tackling challenging projects. Along with technical skills, I bring strong project management abilities to ensure projects are completed on time and within budget. Dedicated to delivering high-quality, innovative solutions, I take pride in collaborating to achieve project goals.

## EDUCATION

**Michigan Technological University**, Houghton, Michigan

**MS, Major**, Electrical and Computer Engineering,

Expected December 2025

## SKILLS

Technical: Analog & Digital circuit designing, RF circuit designing, PCB designing,

Power electronics design, CAN, SPI, I2C, PCI, Ethernet, MCUs like PIC, AVR, TI and STM.

Software: Kicad, Altium, Cadence, Ltpspice, Multisim, embedded C, C++, Fusion 360.

## PROFESSIONAL EXPERIENCE

**Research Assistant**, Michigan Technological University, Houghton, MI

Sep 2024 - Present

Under the supervision of professor **Jin W. Choi**

**Project:** Research and development of NFC based sensors.

- Designed and researched a batteryless NFC sensor device by creating circuits, fabricating prototypes, and tuning the antenna with a capacitor for a 13.56MHz NFC frequency.
- Tested prototypes using various phones at different distances to assess and optimize power generation through different topologies.
- Integrated multiple sensors and evaluated low-power MCUs to achieve optimal power efficiency.

**Research Assistant**, Michigan Technological University, Houghton, MI

May – Aug 2024

Under the supervision of professor **Flavio Bezerra Costa**

**Project:** Designing and Testing HVDC systems

- Designed a converter board for IGBT driver module and C2000 Ti MCU .
- Designed and Fabricated setup of HVDC system to measure fault wave propagation.
- Developed an IGBT based fault simulation between HVDC lines to test various conditions.

**Research Engineer**, Automotive Research Association of India, Pune, Maharashtra

Mar – Nov 2023

**Project:** Designing Battery Management Systems for HV and LV systems

- Development includes circuit designing, optimizing and coordinating the completion of the project.
- PCB validating and proper testing of the component to the standards of the Company in respect to automotive or industrial.

## LEADERSHIP & INVOLVEMENT

**Teaching Assistantship** ( Jin W. Choi)

Jan 2024 – Present

**Graduate Student Government** ECE representative

Feb - Dec 2024

**Secretary/Officer**, [IPC & Electronics Student Chapter Group]

Aug 2024 – Present

**Logistics/Member** , Indian Student Association

Sep 2024 – Present

**Teaching Assistant** (MTU)

Aug 2025 – Present

## WORK HISTORY - [Portfolio](#)

Research Engineer II at Automotive Research Association of India, Pune, INDIA

Sep 2022 – Nov 2023

Product Designer, freelancing , Kolkata, INDIA

May – Aug 2021

## INTERESTS

Mountain biking • Go Kart racing • Flying RC plane • FPV drones • Hiking