Rajan Patkar

rajpatkar.github.io/contact   (309) 863-7053   rajan.patkar.email@gmail.com

Relevant Experience:

Corporate Engineering Intern at Caterpillar (May 2022 – Aug. 2022):

- Automated collection and processing of machine data reports from database with Python
- Identified serial data communication problems (CAN + J1939) on engine control modules
- Developed field-ready solutions using electronics test benches and network diagnostics
- Collaborated within a team to effectively prioritize and rectify customers' machine issues

STEM Student Trainee at Caterpillar Trimble Control Technologies (Jun. 2021 – Aug. 2021):

- Automated testing of calibration software for hydraulic excavators using MATLAB
- Optimized simulation and testing environment for speed, reliability, and efficiency
- Created project reports and extensively documented solutions for future maintenance
- Worked within a group to deliver project ahead of schedule for fall software release

Technology Development Volunteer Intern at The Farmlink Project (Jun. 2020 – Aug. 2020):

- Produced solutions within project group to optimize sustainability of food delivery system
- Reduced delivery emissions by optimizing driving distances for volunteers in JavaScript
- Built automatic tax deduction tool for farmers' food donations with JavaScript & G Suite

Skills:

- Proficient in Java, Python, C, C++, R, MATLAB, JavaScript, HTML, and CAD software
- Harmonious, detail-oriented, and industrious collaborator in task-oriented environments
- Well-practiced interpersonal and presentational communicator (including basic Spanish)

Projects:

Academic Research (Jan. 2022 – present, Sep. 2020 – May 2021):

- Designing VR-based physics education curriculum within research group using Unity/C#
- Analyzed hydrogel surface properties from instrument data using MATLAB & Python
- Completed and presented mathematics research project on self-duality of k-Schur basis

Illinois Robotics in Space & FIRST Robotics (Jan. 2022 – present, Sep. 2014 – May 2021):

- Developed motion control, vision processing, and interfacing algorithms in Java
- Programmed robot vision/guidance system in Python using reflectivity camera

Education:

University of Illinois at Urbana-Champaign (Aug. 2021 – May 2025) – 3.9 GPA:

- Pursuing Bachelor of Science in Computer Engineering with Minor in Statistics

Illinois Mathematics and Science Academy (IMSA) (Aug. 2018 – Jun. 2021) – 3.8 GPA