Rajan Patkar

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Relevant Experience:

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

- Automated testing of calibration software suite for hydraulic excavators
- Utilized MATLAB to test programs within machine controls calibration tools
- Optimized simulation and testing for speed and accuracy, documented solutions
- Worked within a team to deliver programs ahead of schedule for fall software release

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

- Built automatic tax deduction tool for food donations in Google Apps Script/JavaScript
- Programmed Python bot to arrange weekly internal meetings with round-robin algorithm

Skills:

- Proficient in Java, Python, MATLAB, JavaScript, Google Apps Script, and HTML/CSS
- Skilled with diverse types of spatial visualization (simulation, linear algebra, CAD)
- Limited working proficiency in Spanish with B1-level written and oral communication

Projects:

FIRST Robotics (Sep. 2014 – May 2021):

- Used Java for robot motion control, vision processing, and hardware/software interfacing
- Developed robot vision/guidance system in Python using reflective tape-sensing camera

Student Inquiry and Research (SIR) (Sep. 2020 – May 2021):

- Finished math research project (representation theory) on self-duality of k-Schur basis
- Excelled at synthesizing hypotheses found with Python/Jupyter-based tool SageMath

Academic Projects (Aug. 2018 – present):

- Applied Python in calibration and measurement algorithms for particle physics
- Visualized electric/magnetic fields from experiments with contour plots with Python

Education:

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

- Pursuing Bachelor of Science in Computer Engineering

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

- Graduated from the #1 ranked Illinois high school (niche.com)
- Successfully completed college-level math, physics, and computer science courses
    - Linear Algebra, OOP, Calculus-Based Physics, and Multivariable Calculus
- Concentrated heavily on volunteering and community service (291.3 service hours)