Rajan Patkar

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Personal Summary:

I am a results-oriented high-school student with proven technical, analytical, problem-solving, and organizational skills. I aim to leverage my abilities to gain experience with an internship during the summer. I am an efficient team player who works well in demanding situations.

Education:

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

- Committed to UIUC for Bachelor of Science in Computer Engineering

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

- High school diploma (Jun. 2021)
- Excelled in STEM-focused public residential school environment
    - #1 public high school in Illinois, #8 public high school nationally (niche.com)
- Successfully completed college-level math, physics, and computer science courses
    - Linear Algebra, Object Oriented Programming, Modern Physics, Calculus-Based Mechanics, Calculus-Based Electricity and Magnetism, BC Calculus, etc.
- Joined IMSA for its challenging curriculum and research opportunities
- Concentrated heavily on volunteering and community service (291.3 service hours)

Dunlap High School (Aug. 2017 – May 2018):

- Thrived in maximum-load honors curriculum, including Algebra II Honors and Software Applications, while studying for SAT and participating in academic extracurriculars

Experience:

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

- Non-profit initiative that connected food banks to surplus produce from farms
- Built automated Google Form tax deduction tool for farmers' donation of surplus using IRS Form 8283 in Google Apps Script/JavaScript
- Made delivery proximity notification tool that notified volunteers of understaffed food bank deliveries near them in Google Apps Script/JavaScript
- Programmed Slack channel bot to arrange meetings using a round-robin algorithm between Farmlink community members using Python and webhooks

Data Research/Analysis Volunteer Intern for Rebecca Parson 2020 (Jun. 2020 – Aug. 2020):

- Political campaign run in Washington's 6th congressional district
- Worked on filtering, verifying, and analyzing population-level data within Google Sheets

Volunteer for FIRST Robotics (Nov. 2015 – present):

- Mentored middle-school FLL robotics teams on teamwork, design, and programming

- Volunteered at multiple FLL tournaments as a table volunteer official
- 2021 Springfield FLL tournament robot design, project, and core values volunteer judge

Peer Tutor for IMSA Students (Aug. 2018 – Jun. 2020):

- Tutored IMSA students in beginner Spanish in the IMSA Peer Tutor program
- Led tutoring sessions for BC Calculus, computer science, and physics

Projects:

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

- Excelled in IMSA's research-oriented external mentoring program
- Worked on affine Grassmannian functors, k-Schur functions, and Young tableaux

FIRST Robotics (Sep. 2014 – present):

- Used Java for robot motion control projects for FRC team Titan Robotics 2022
- Worked on a general Kalman filter, vision processing, and hardware/software interfacing
- Developed reflective tape-sensing camera for robot vision/guidance system in Python
- Utilized HTML/CSS to develop website for FLL robotics team

Academic Projects (Aug. 2018 – present):

- Applied Python in Modern Physics to learn algorithms for particle physics (e.g. calibrating calorimeters, measuring particle jets, etc.)
- Used Python for visualizing electric/magnetic fields from in-class experiments with contour plots in Calculus-Based Electricity and Magnetism
- Created board game to illustrate medieval battle strategy for Conflict in World History
- Reimagined Shakespeare's *Hamlet* in *Minecraft* with in-game commands for new effects
- Used video analysis and homemade pendulum to determine acceleration due to gravity with harmonic equations in Physics: Sound and Light
- Created story in Digital Literary Studies with a branching storyline using HTML/CSS

Skills:

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

Honors/Awards:

CWRA+ Advanced (Mar. 2020):

- CWRA+ test measures critical thinking/written communication skills
- Advanced signifies that student has skills for college/work environments

National Spanish Examination Oro (Apr. 2019):

- NSE exam measures Spanish reading, writing, and listening abilities
- Oro (gold) signifies scoring top 5% nationally in Spanish proficiency exam