Rajan Patkar

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Relevant Experience:

Cybersecurity Intern at the University of Illinois Information Trust Institute (May – Aug. 2024):

- Crafted hardware/software suite to determine efficiency of large-scale SSL offloading
- Designed network agents in C to record packet timing data for network performance
- Utilized Python automation package to control network agents and run experiments
- Trialed imaging automation, GPS connection, and network monitoring with Raspberry Pi
- Explored govt. cyberphysical systems standards and attended cybersecurity conference

Corporate Engineering Intern at Caterpillar (May – 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

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

- Automated testing of calibration software for hydraulic excavators using MATLAB
- 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. – Aug. 2020):

- Built automatic tax deduction tool for farmers' food donations with JavaScript & G Suite

Skills:

- Proficient in C, C++, x86 assembly, Python, MATLAB, R, Java, ArcGIS, JS, and HTML
- Applied side-channel, SQL injection, XSS, CSRF, shellcode, and hash collision tactics
- Harmonious, detail-oriented, and industrious collaborator in task-oriented environments
- Proficient interpersonal communicator (native English/Marathi, B2 Spanish, A2 Korean)

Projects:

- Piloted analyzing cellphone video to triangulate event location/timing using OSINT
- Constructed reliable serial communication protocol to transmit motor and sensor signals
- Developed motion control algorithms integrating sensor data in MATLAB and Java
- Within research group, designed and published VR-based physics education curriculum

Education:

University of Illinois Urbana-Champaign – 3.67 GPA
B.S. in Computer Engineering (Aug. 2021 – May 2025):

- Focus on cybersecurity as an SFS (Scholarship for Service) CyberCorps Scholar
- Study abroad semester (Fall 2024) at Hanyang University in Seoul, SK