Vivek Jagadeesh

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Objective

Seeking an internship in cybersecurity that leverages my experience in offensive cybersecurity research, kernel development, and system hardening.

Education

Worcester Polytechnic Institute (WPI), Worcester, MA
Master of Science in Computer Science, GPA: 4.0/4.0 Graduation Dec 2026
Bachelor of Science in Computer Science – Concentration in Cybersecurity, GPA: 3.96/4.0 Graduation May 2026

Relevant Courses:
Computer Networks Security*, Cryptography and Data Security*, Machine Organization and Assembly Language, Operating Systems, Software Engineering, Design and Analysis of Algorithms*.
** Graduate level course*

Skills

Cybersecurity & Systems: System Hardening, Vulnerability Research, Kernel Development, OS, Cryptography
Programming Languages: C, C++, Python, Java, SQL, JavaScript, TypeScript
Machine Learning: Scikit-learn, AWS Bedrock, Retrieval Augmented Generation (RAG), Agent Flows, OpenSearch
Emulation & Development Tools: Linux, Docker, QEMU, Git, VirtualBox
Databases & Cloud: PostgreSQL, Oracle, SQLite, AWS (EC2, RDS, S3, DynamoDB, Lambda), Azure (Cosmos DB)
Frameworks & Libraries: React.js, Next.js, Node.js, Express.js, Flask, GraphQL, Tailwind CSS, Prisma ORM, Auth0

Work Experience

Software Engineering Intern, *Waters Corporation, Milford, MA* June 2025 – Aug 2025

- Engineered and deployed a Retrieval Augmented Generation (RAG) chatbot to streamline order support.
- Developed a secure user authentication system using AWS Cognito and token verification system.
- Created serverless architecture using 7 AWS Lambda Functions for response generation and document retrieval.
- Designed WebSocket layer to enable real-time communication between UI and Lambda Functions.
- Implemented an AI Agent Flow to allow customers to re-order previous purchases directly from the chatbot.
- Presented technical demonstrations to the senior leadership team and global stakeholders.

Project Experience

Secure Memory Allocator for Linux, *Major Qualifying Project* Aug 2025 – Present

- Developing a secure memory allocator for the Linux Kernel using ARM Memory Tagging Extension (MTE).
- Conducted in-depth vulnerability research into modern Linux Kernel exploits, specifically DirtyCred.
- Architected a custom kernel module and 3 new system calls to create interface between user space and allocator.
- Cross-compiled, tested, and deployed the modified Linux kernel onto an embedded hardware target (Pixel 9A).
- Established testing framework using KUnit and custom benchmarks to measure security and performance.
- Testing allocator stability and security using QEMU, Docker, and AOSP.

MLB Pitch Classification System, Personal *Project* July 2024 – Aug 2024

- Developed machine learning system to classify MLB pitches from statistical data using Scikit-learn and Python.
- Selected features from the dataset to tune and train a neural network, achieving a predictive accuracy of 92%
- Connected model with a custom web application using Next.js, Python, Flask, SciKit-Learn and PostgreSQL.
- Implemented a CI/CD pipeline using GitHub actions and Docker to automate the containerization process.

An application for Brigham and Women's Hospital, *CS 3733 – Software Engineering* Mar 2024 – May 2024

- Contributed 8,500 lines of code and 128 commits as Assistant Lead Software Engineer for a 10-person team.
- Engineered a security system with Auth0, featuring RBAC, automated user provisioning, and protected APIs.
- Developed and maintained the system's backend, including Express.js REST APIs and PostgreSQL database.
- Deployed application to AWS EC2 and RDS through CI/CD pipeline using Docker and GitHub actions.
- Led scrum meetings, retrospectives, technology stack presentations, and two application demonstrations.
- Created and implemented entity-relationship and UML use case diagrams to simplify architectural decisions.

Leadership & Teaching Experience

Student Teaching Assistant, *WPI Department of Computer Science, Worcester MA* May 2024 – Present

- Mentored 24 students across 6 agile teams in design, development, and cloud deployment of web applications.
- Led recitation sessions on cloud deployment and containerization using AWS EC2, RDS, and Docker.
- Conducted weekly code reviews and provided actionable feedback to enforce software engineering standards.
- Guided teams in implementing agile ceremonies (Scrum, retrospectives, backlog refinement).