

Vivek Jagadeesh

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Objective

I am seeking a fast-paced, challenging position in Distributed Systems and Cybersecurity that leverages my experience in systems development, software architecture, and agile team leadership to develop secure, scalable technologies.

Education

Worcester Polytechnic Institute (WPI), Worcester, MA

Bachelor of Science in Computer Science, GPA: 3.96/4.0

Graduation May 2026

Master of Science in Computer Science, GPA: 4.0/4.0

Graduation Dec 2026

Relevant Courses:

Software Engineering, Computer Networks Security, Operating Systems, Introduction to Artificial Intelligence, Machine Organization and Assembly Language, Database Systems, Design and Analysis of Algorithms, Object-Oriented Design

Skills

Programming Languages: C, C++, Python, Java, TypeScript, JavaScript, SQL

Frameworks & Libraries: React.js, Next.js, Node.js, Express.js, Flask, GraphQL, Tailwind CSS, Prisma ORM, Auth0

Databases & Cloud: PostgreSQL, Oracle, SQLite, AWS (EC2, RDS, S3, DynamoDB, Lambda), Azure (Cosmos DB)

Development Tools & Platforms: Linux, Docker, Qemu, GitHub, VirtualBox, Vercel Cloud

AI/ML Technologies: AWS Bedrock, OpenSearch, scikit-learn, Retrieval Augmented Generation (RAG), Agent Flows

Areas of Interest: Operating Systems/Kernel Development, Cybersecurity, Web Development, Artificial Intelligence

Work Experience

Student Assistant, WPI Department of Computer Science, Worcester MA

May 2024 – Present

- Coached 6 agile teams (4 students each) in building full-stack web applications using Flask, Docker, and AWS.
- Led recitation sessions on cloud deployment using AWS EC2, Docker Hub, and AWS RDS.
- Facilitated weekly sprint demonstrations and worked with the supervising instructor to assess team progress.
- Provided actionable feedback on more than 30 student projects each week, highlighting areas of improvement.
- Guided teams in implementing agile ceremonies (retrospectives, daily scrums, and backlog refinement).

Software Engineering Intern, Waters Corporation, Milford, MA

June 2025 – Aug 2025

- Engineered and deployed a Retrieval Augmented Generation (RAG) chatbot to streamline order support.
- Integrated Nova Lite for response generation and an OpenSearch knowledge base for document retrieval.
- Created 7 AWS Lambda functions for response generation, document retrieval, and user management.
- Built a WebSocket layer to enable real-time communication between the UI and backend services.
- Implemented an agent flow to allow customers to re-order previous orders directly from the chatbot.
- Designed a token verification function to authenticate users and safeguard order data from unauthorized access.
- 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).
- Researching privilege escalation and use-after-free exploits to develop countermeasures to memory safety errors.
- Modifying the Android kernel to evaluate the allocator using system calls and kernel modules.
- Created user-space implementation of the Slab and secure allocator to analyze memory caching performance.
- Testing allocator stability and security using QEMU and the Android Kernel.

MLB Classifier, Personal Project

July 2024 – Aug 2024

- Developed full-stack MLB Pitch Classifier using Next.js, Python, Flask, sci-kit learn, and PostgreSQL.
- Trained a neural network to classify MLB pitches using advanced metrics and achieved 92% model accuracy.
- Utilized Python Flask to create RESTful APIs to connect the machine learning model to the React.js frontend.
- Built a CI/CD pipeline to automatically build Docker containers upon a push to the project GitHub repository.
- Deployed the application on AWS EC2 and RDS and configured a custom domain name with Cloudflare DNS.

An application for Brigham and Women's Hospital, CS 3733 – Software Engineering

Mar 2024 – May 2024

- Led full-stack development using TypeScript, Express.js, Prisma ORM, Auth0, AWS EC2, and AWS RDS.
- Served as an Assistant Lead Developer and made 127 contributions and 8,500 additions across the project.
- Led scrum meetings, retrospectives, technology stack presentations, and two application demonstrations.
- Maintained the PostgreSQL database schema, Express.js REST APIs, and map editor user interface.
- Integrated Auth0 security features including RBAC, auto account creation and deletion, and protected APIs.
- Created and implemented entity-relationship and UML use case diagrams to simplify architectural decisions.