

Johan Lakshmanan

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EDUCATION

University of Massachusetts, Amherst

Amherst, MA

Bachelor of Science in Computer Science — 3.6 (Deans List)

Aug. 2023 – May 2026

- Relevant Coursework: Data Structures, Algorithms, Software Engineering, Machine Learning, Search Engines

EXPERIENCE

Quantitative Research Intern

Jun. 2025 – Aug. 2025

Fidelity Investments

Boston, MA

- Piloted a model-driven trade router, scaling trade volume by **30%** and saving **\$5M+** for **300+** hedge funds.
- Developed and integrated backend **machine learning** models in **Python** and **Kdb+/Q** to optimize routing for **25M+** trades, improving selection accuracy by **20%** and reducing decision latency below **10 ms**.
- Constructed automated training, deployment, and data pipelines on **AWS EKS** using containerized microservices and **MLflow**, supporting reproducible model versioning and rapid rollback in production.
- Integrated **CI/CD** workflows and automated validation to safely deploy model updates to live trading systems.

Software Engineering Intern

May 2024 – Aug. 2024

Waters Corporation

Milford, MA

- Engineered a full-stack automated renewal quote system using **Python**, **RESTful APIs**, and a responsive UI, reducing manual workload by **100+ hours monthly**, streamlining sales operations.
- Designed multiple **REST APIs** to retrieve customer **SharePoint** resources by environment ID, decreasing mitigation times by 30% for runtime incidents, reducing loads for on-call engineering teams.
- Integrated AI automation with **C#** and **SQL** in UiPath, optimizing invoice processing in **SAP S/4HANA** workflows, leading to **25%** faster processing visualized in **Power BI** and **Tableau** dashboards.
- Utilized **Agile** practices and **JIRA** in bi-weekly sprints to develop algorithms through efficient **CI/CD** processes.

Software Engineer

Feb. 2024 – May. 2024

Build UMass

Amherst, MA

- Led full-stack development of a consulting platform using **MERN stack**, deployed on **Dockerized AWS EC2** with **Nginx** load balancing and **GitHub Actions CI/CD** pipelines for production scalability.
- Rebuilt **RESTful APIs** with pagination, **Redis caching**, and profiling, increasing data throughput by **30%**.
- Partnered with designers to improve UI responsiveness and reduce load times by **20% for 200+** concurrent users.

Embedded Systems Researcher

May 2021 – Aug. 2022

MIT Lincoln Laboratory

Cambridge, MA

- Built a secure bootloader for Stellaris microcontrollers (**C/Assembly**) and designed penetration testing frameworks (**Python/SQL**), patching **16+ vulnerabilities** and earning **1st place** in the MITLL Cybersecurity Challenge.
- Deployed a static website using Hugo on AWS, leveraging a VPC to improve uptime by **15%**.

PROJECTS

AI Bitcoin Sentiment Platform | Python, FastAPI, SQLAlchemy, NLP, Docker

Aug. 2025 – Present

- Built a modular **ETL** and **ingestion** pipeline aggregating cryptocurrency news, Reddit, and price feeds, reducing end-to-end **processing latency by 40%** under concurrent workloads.
- Designed and deployed a **FastAPI** microservice for scheduled ingestion, **FinBERT**-based sentiment inference, and caching, improving sentiment scoring stability and query relevance by 30% at scale.

Dusty | Python - OpenCV, Keras, Scikit

Sep. 2022 – Jan. 2023

- Built **CNN** plant disease detector (**20K images**) with **82% accuracy** and **F1=81%** using **Keras/OpenCV**.

Team Unlimited Robotics | Java - FTC SDK, Android Studio, REV Robotics

Apr. 2020 – Sep. 2023

- Led **15-member** robotics team to **MA State Championship**, securing **Schneider Electric** sponsorship.

SKILLS

Languages: Java, Python, C/C++, JavaScript (Node.js), TypeScript, SQL, HTML/CSS

Cloud: AWS (EC2, EKS), Google Cloud, Docker, Kubernetes, Redis, Nginx, Terraform, Jenkins, Azure

Frameworks: React, Node, Express, Django, FastAPI, JUnit, Pandas, Material-UI, RESTful APIs

Technologies: Git, VS Code, Visual Studio, Linux, VMware, JIRA, Power BI, GitHub Actions (CI/CD)