

# James Khadan

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## EDUCATION

### Northeastern University

Boston, MA

*Bachelor of Science in Computer Science, Honors Program, Systems Concentration*

*September 2023 - December 2026*

**Achievements:** Deans List, Honors Impact Badge, Honors Scholarship

**GPA:** 3.6/4.0 **Major GPA:** 3.8/4.0

**Extracurriculars:** Oasis Tech Club *Instructor/Mentor*, ColorStack *Team Member*

**Relevant Coursework:** Computer Systems (Grad), Computer Networks (Grad), Foundations of Cybersecurity, Intro to Databases, Programming in C++, Projects in Cloud Computing, Object-Oriented Design

## TECHNICAL SKILLS

**Languages:** Python, TypeScript, Java, Rust, C#, C++, C, Rust, SQL, Golang

**Frameworks & Tools:** Git, React, Docker, RedHat Openshift, Kubernetes, Azure, AWS, PowerBI, NumPy, Pandas, PyTorch

## EXPERIENCE

### Sponsors for Educational Opportunity (SEO)

June – August 2025

*Tech Developer & Career Intern*

*NYC - Remote*

- Completed **300+** hours of rigorous computer science and software engineering training focused on data structures, algorithms, and full-stack web development.
- Lead **SCRUM-like software development teams** to design, test, and implement full-stack applications using **Python (Flask)**, **Golang**, **SQL**, **Ansible**, **Terraform**, **JavaScript**, **CSS**, and **API integrations**.
- Participated in **professional development workshops** and received **1:1 mentorship** from industry professionals

### Massachusetts Financial Services Investment Management

January – July 2025

*Full-Stack Software Engineer Co-op*

*Boston, MA*

- Developed full-stack web applications for business units across **compliance, technology, and reporting**
- Saved **100+ hours monthly** for compliance team with a web portal to parse stakeholder documents (originally scoped for **6 engineers, 6 months, \$500K**)—demoed to CEO and Enterprise Risk Management using **FastAPI** and **React**.
- Reduced onboarding from **weeks to seconds** via self-service portal serving **200+ employees** daily.
- Enabled **10,000+ documents** searchable via natural language by integrating **Azure LLMs with RAG**.
- Increased visibility and traceability of metrics across departments by developing a **telemetry-based reporting portal**.

### Lastgateway Enterprise

January 2019 – January 2025

*Founder*

*Howell, NJ*

- Founded a Platform/Software as a Service business providing computing resources to over **5 organizations** within my community, reducing server and compute costs by **more than half** that of traditional cloud providers
- Designed, implemented, and serviced over **30+ software resources** simultaneously, using **Docker** and a **Proxmox Hypervisor for Linux Containers**, significantly increasing customers' operational efficiency and reducing IT workload
- Maintained a consistent **99.9% uptime**, ensuring customer's resources are continuously available

### Amazon Web Services

May – June 2024

*AWS Academy Trainee*

*Seattle, WA*

- Set up a highly scalable **EC2 instance** and **Amazon RDS database**, optimizing application performance by separating its components.
- Developed an EC2 Auto Scaling group that **boosted application capacity by 50%** during load tests, automatically adjusting to traffic surges with up to **150 concurrent users**, ensuring uninterrupted service during peak loads.
- Created a Virtual Private Cloud with **4 subnets** distributed across **2 availability zones**, configuring **Elastic Load Balancing** to manage up to **3 EC2 instances**.

### Polygence

April – August 2021

*AI Research Assistant*

*Online*

- Researched **suggestion-based advertisement** alongside a Stanford University Masters Student to determine an effective model for suggesting new music
- Tested a **neural network** approach to model desired music based on listening history using **PyTorch Lightning**
- Assisted with data cleaning, preparation, and loading for over **1 million songs** used for training the model

## PROJECTS

### Rustlets (Rust Containerization)

*Rust, Linux*

- Built a container runtime in Rust leveraging **8 Linux namespaces** achieving process isolation with **sub-100ms** startup times compared to traditional VMs
- Implemented resource management through cgroups v2 integration, enabling precise CPU and memory limits with **less than 5% overhead**, supporting deployment of **100+ concurrent containers** per host
- Engineered security layers including capability dropping, seccomp-BPF syscall filtering, safe function calls, and pivot\_root filesystem isolation, reducing attack surface by **95%** compared to unprivileged processes

### School Bot (Calendar Assistant)

*Python, PyTorch, Discord API*

- Assisted over **2K students** navigate my high school's block schedule system through an interactive chatbot
- Implemented natural language processing (NLP) capabilities, enabling the bot to handle over **10,000 queries per day** with an **80% accuracy rate**, enhancing user experience
- Increased student punctuality by over **30%** through the automated class reminder and schedule checker systems