KATIE AMARAL

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EDUCATION

MASTER OF SCIENCE
BOSTON UNIVERSITY
Computer Information Systems
IT Security GPA 4.0 Graduated 2015

SKILLS

Languages & Frameworks

Python
• FastAPI & Flask

JavaScript
• NodeJS

TypeScript
• React, Angular & NestJS

Artificial Intelligence

GenAI Models
• Anthropic Claude Instant
• OpenAI GPT3.5 & GPT4

Libraries
• Python LangChain
• Python TensorFlow

Cloud

Amazon AWS
• Bedrock

Microsoft Azure
• OpenAI

CI/CD

Docker & Kubernetes

Databases

PostgreSQL, MongoDB & Redis

EXPERIENCE

SENIOR SOFTWARE ENGINEER APRIL 2019 - PRESENT

Harvard University **Library Technology Services**

• Back-End Development - Build large-scale, performant, and secure services interconnected with APIs and message queues to support a large volume of requests for mission-critical applications serving patrons worldwide using JS/TS frameworks such as NodeJS & NestJS and Python frameworks such FastAPI & Flask
• Front-End Development - Design responsive, accessible, user-friendly interfaces meeting or exceeding standards for library UX and accessibility with JS/TS frameworks such as React & Angular
• Artificial Intelligence - Leverage generative AI models to modernize library discovery by enabling natural language interaction with catalog services using Python libraries such as LangChain and TensorFlow
• CI/CD - Automate workflows, orchestrate deployments, and manage application configurations and encrypted secrets using Docker, Kubernetes, and Amazon AWS
• Architecture Design - Design complex systems based on software engineering architecture principles and best practices
• Security - Build and integrate authentication and authorization services; enforce secure coding practices; scan applications and remediate security vulnerabilities
• Automated Tests - Write unit, integration, and performance tests with Jest & Pytest

Project highlights
• AI library catalog chatbot - Built an AI chatbot to modernize the UX for patrons searching the library catalog, enabling natural language interaction, and reducing the amount of time required for research and discovery
• Asset Delivery - Acted as technical lead to design and build a modernized asset delivery infrastructure based on a system of microservices that communicate via APIs and message queues to store, process, and deliver millions of digital objects with optimal performance to support a large volume of requests around the world
• Authentication & Authorization services - Designed and built a centralized authorization API to verify JWT tokens and an SSO login service that integrates with central authentication services

SOFTWARE ENGINEER MARCH 2015 - APRIL 2019

Broad Institute of Harvard and MIT **Technology Services**

• Full-Stack Development - Designed and built custom web applications working on all levels of the tech stack including front-end, back-end, databases, authentication & authorization, security, testing, and CI/CD deployment automation
• Systems Integration - Integrated systems interconnected with web service APIs
• IT Automation - Automated IT tasks with scripts, workflows, and scheduled jobs
• IT Security - Scanned systems for vulnerabilities, ensured secure coding practices, implemented access controls, applied security patches, managed application configurations, encrypted secrets, verified compliance with regulations
• ServiceNow SaaS - Built custom apps in the ServiceNow platform