

Michael C. Montanaro

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PROFILE

Software Engineer with over 5 years of programming experience in developing innovative back-end solutions across a range of technologies, including Python and Java. Proven track record of designing and implementing scalable cloud-native software components, adept at solving complex problems and delivering robust systems that enhance user engagement. Strong technical writing and communication skills facilitate thorough documentation and effective collaboration in cross-functional teams. Seeking a position where I can leverage my technical expertise to build engaging in-app experiences.

PROFESSIONAL EXPERIENCE

NewStore, Inc.

A unified mobile-first e-commerce platform anchored in omnichannel point-of-sales and consumer shopping apps.

Software Engineering Intern 2, Boston, MA

January 2023 - July 2023

- Scripted semi-automations for the verification of 50 OpenAPI documents, reducing verification time by 80%.
- Developed a search-and-replace tool for JSON, YAML, and TOML files, enhancing the team's configuration file management.
- Built comprehensive test benches to ensure the reliability of the search-and-replace functionality across different file formats.

Software Engineering Intern 1, Boston, MA

January 2022 - August 2022

- Optimized team productivity by enhancing the debugging processes for Docker-contained microservices within Kubernetes.
- Designed and re-engineered the data pipeline library, migrating from RabbitMQ to a fully hosted service on AWS SNS and SQS, improving system speed and reliability.
- Strengthened production reliability against system failures by creating unit tests and updating the CI/CD pipeline.
- Engineered a microservice that significantly enhanced system reliability and reduced data loss during transmission by enabling seamless, zero-drop pipeline transfers between RabbitMQ and AWS architecture.

Sesh – Independent project

A secure, AI-assisted platform that optimizes project management through streamlined workflows and resource handling.

Founder and Lead Developer, Belmont, MA

March 2023 - Present

- Designed an AI Agent with integrated RAG for efficient analysis from local or remote LLMs using the LangChain library.
- Reinforced deployments with Docker and Kubernetes, ensuring consistent environments and faster release cycles.
- Implemented a three-tier testing architecture for each Django app, optimizing testing efficiency and ensuring comprehensive coverage of edge cases to enhance application reliability and performance.

Belmont Hill School Sports Camps

Soccer Camp Director, Belmont, MA

July 2024

- Supervised and mentored 8 counselors and 36 young athletes with a range of abilities, to help facilitate balanced competition.
- Crafted dynamic group and individual activities, working closely with coaches to aid in player development and foster team unity.

PROJECTS

Northeastern University

Full-Stack Developer, Reversi Web Application

January 2024 - April 2024

- Accelerated game development by designing a robust prototype using the MVC architecture, reducing time to an MVP by 50%.
- Integrated persistent storage in the Node.js app with PostgreSQL using a singleton data controller and command design pattern.
- Ensured seamless game state management with WebSockets, achieving real-time gameplay updates and data synchronization.

Backend Developer, LazyGrocer

March 2024 - April 2024

- Engineered robust database operations through comprehensive MySQL schema with triggers, procedures, and error handling.
- Unit tested a singleton data controller class to ensure the functionality of over 20 user services.
- Visualized user stories and refined software architecture adjustments using diagrams generated from PlantUML.

Full-Stack Developer, E-Mobility Solar Charging Station

August 2023 - November 2023

- Produced a mobile application with Flutter and Dart, enabling efficient MQTT communication with Eclipse on an EC2 instance.
- Optimized communication protocols using UART for reliable data transfer between ESP32 and SIPEED microcontrollers.
- Secured access control to the charging station by implementing Two-Factor Authentication (2FA) for each outlet.
- Managed C++, Dart, and MATLAB code on GitHub for version control and collaboration through different stages of development

SKILLS

Computer Languages: Python, Java, C++, C, TypeScript, JavaScript, SQL, Dart, NoSQL, Golang, RISC-V, System Verilog, Bash, HTML

Software: Flutter, Docker, Electron, Git, React, Vue.js, Node.js, Linux, ESP-IDF, WSL, Kubernetes, LangChain, MySQL, PostgreSQL

EDUCATION

Northeastern University, Boston, MA: Bachelor of Science in Computer Engineering

May 2024

Achievements: Magna Cum Laude, Dean's Scholarship, Davies Semple Maddock Engineering Scholarship, Men's Varsity Soccer Team

Belmont Hill School, Belmont, MA

May 2020

Achievements: High Honor Roll 2016-2020, National Cum Laude Society, Varsity Soccer Captain, Spanish Prize, Summa Cum Laude