Sebestien Palmerio

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EDUCATION

University of Waterloo Expected Graduation December 2023
Bachelor of Mathematics in Computational Mathematics, Minor in CS MAV 3.61

Tutoring Courses Algebra, Data Structures, Intro to Optimization, Linear Algebra I/II, Multivariable Calculus

EXPERIENCE

Software Engineering Intern September 2021 - May 2022
Palitronica Inc. Waterloo, ON

- Engineered a backend of .NET REST APIs using microservice architecture, automating Azure deployments and NoSQL database management for municipalities across Ontario and private consumers in the US
- Boosted ML algorithms' anomaly detection accuracy by 10% using Python scripts manipulating CPU usage daily
- Integrated CD pipelines for Java and .NET microservices using Drone, saving 20+ hours of QA efforts
- Designed an Ansible playbook to automate Azure IoT Edge device provisioning, reducing deployment time by 90%
- Implemented the core feature for testing Azure IoT Edge modules by developing an IoT Device simulator with C#
- Constructed logging pipelines with the ELK stack and Azure Event Hubs, alerting hundreds of errors in staging

Undergraduate Research Assistant May 2022 – Present
University of Waterloo - Real-time Embedded Software Group Waterloo, ON

- Research entails software development of Palitronica's industry front-running physics-based cybersecurity products
- Efficiently optimized microservices, reducing over 5000 lines of code by developing a private NuGet package
- Slashed $1000 from each deployment's hardware costs by virtualizing infrastructure with Azure VMs
- Improved deployment speeds of Kubernetes pods for ML algorithms by 22% by restructuring existing Helm Charts
- Supervised by Professor Sebastian Fischmeister under the David R. Cheriton School of Computer Science

DevOps and Security Engineering Intern - Text IQ Incoming Fall 2022
Relativity Vancouver, BC (Remote)

PROJECTS

Capital Ships (source) | *C#, .NET, Swagger, SQLite, Docker* Personal Project

- Implemented a ASP.NET Web API using Swagger, interacting with an in-memory SQLite database
- Designed the SQLite database in Boyce-Codd normal form with its corresponding Entity-Relationship Diagram
- Leveraged the MVC design pattern to expose APIs for CRUD operations using advanced SQL queries
- Containerized the service using a multi-stage build Dockerfile design

MyInterviewer (source) | *GCP, Python, Flask, Javascript, HTML, CSS* Hackathon Project

- Developed a full stack web app-based interview preparation platform for non-native English speakers
- Integrated backend Google Cloud Text-to-Speech and Speech-to-Text with GC Storage buckets using Python
- Conducted research to determine the most valuable question pools to improve interview skills

Pysics (source) | *Python* Personal Project

- Implemented an open source computational physics Python library
- Includes methods of integration and differentiation, root finding, and BVPs based on a text by Mark Newman

Personal Website (source) | sebestien.com | *HTML, CSS* Personal Project

- Designed a personal homepage with vanilla HTML and CSS, used as a central point-of-contact
- Hosted on GitHub pages with private domain

TECHNICAL SKILLS

Languages: Python, C, C++, C#, Go, Bash, LaTeX
Frameworks/Tools: .NET, Agile, Git, Jupyter, Scrum
Cloud: Azure AD B2C, Container Registry, API Manager, Event Hub, IoT Hub, Storage (Tables), VM
DevOps: Ansible, ArgoCD, Docker, Drone, ELK Stack, Helm, Kubernetes, Linux (Debian-based distros)
Databases: MinIO, NoSQL, SQLite