Mitchell Puersten

Software Engineer, Full Stack

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Technically minded and solution-oriented software engineering professional with 5+ years' experience delivering system architecture, scalable application development, and front-end and back-end software projects within scope guidelines.

Proficient in Agile Software Development Lifecycle (SDLC); expert in designing, implementing, debugging, and optimizing software modules that exceed organizational and user expectations. Instrumental in developing, testing, and executing front-and-backend solutions by employing expertise in modern web stack. Specializing in Python, C# .NET, and TypeScript with experience in React, Angular, and ASP .NET Core. Talent for resolving bugs, addressing areas in need of refactoring in existing programs, and streamlining software engineering processes. Dedicated to bringing innovative solutions to life and fixing technical issues.

Areas of Expertise:

Object-Oriented Programming **|** *Software Development Life Cycle (SDLC)* **|** *Front-end & Back-end Development* **|** *Data-Intensive Application Design* **|** *Test Driven Development* **|** *Site Architecture* **|** *Web Application Design* **|** *Debugging* **|** *Data Structures*

Technical Proficiencies

Operating Systems & Software:	Windows **|** Linux **|** C# **|** .NET **|** Embedded C **|** C++ **|** Python **|** JavaScript **|** TypeScript **|** Angular **|** Jenkins **|** Azure **|** AWS **|** Cognito **|** RDS **|** DynamoDB **|** Elasticsearch **|** Kibana **|** GitLab **|** Jira
Tools:	Visual Studio **|** Bitbucket **|** SonarQube **|** ZEEK (Network Monitoring Tool) **|** ELK Stack (Elasticsearch, Logstash, Kibana) **|** AWS Services (Cognito, Lambda, X-Ray, RDS, DynamoDB, S3, Route 53, ECS, CloudWatch, CloudFormation) **|** Postgres **|** PostgreSQL
Hardware:	Fiber Optic Sensor Technology **|** Laser Module Hardware **|** WESCAM Turrets **|** Embedded Devices

Career Experience

MDA – Brampton, Ontario, CA   2022 – Present

International space mission partner specializing in robotics, satellite systems, and Geointelligence.

Int. MTS – Software (Architect, SM)

Facilitating design and architecture of the Command-and-Control software for Canadarm3 mission control center in conjunction with NASA's Artemis program. Assisting Lead Ground Software Architect by providing support in high-level software design, documentation, and prototyping. Identifying and resolving technical challenges and bottlenecks during software development.

Notable Contributions/Achievements:

- Excelled as Scrum Master leading a group of junior developers; supported development teams in establishing new designs, technologies, and best practices for successful software deployment.
- Improved software scalability for future development and enabled a critical demo to the Canadian Space Agency by leading a successful refactoring initiative of executing a microservice backend using C# for MDA's mission control center.
- Headed mission control backend software development; educated fellow engineers on Visual Studio development platform, C# best practices, and implementation of 30-40% of structural code to initiate the codebase.
- Assumed ownership of mission control Frontend's software requirement grooming and approval; initiated and rolled out kickoff to development teams, ensuring accurate ATDD (Acceptance Test-Driven Development) and proper MVP (Minimum Viable Product) for each product increment.
- Received a recommendation and subsequently transitioned to a more advanced role as a ground software architect, following successful leadership of a refactoring initiative.

Fibos Inc. – Toronto, Ontario, CA   2019 – 2022

Development and production of fiber optic sensor technology, sensor system solutions, and industrial cyber security applications.

Junior Software Developer

Led software development for an embedded device test suite in .NET, including C++ plugin development. Released a set of embedded laser module features for two clients by collaborating with the CEO and CTO. Conducted extensive testing of an in-house vulnerability reporter across a diverse range of industrial devices by collaborating with Centennial College.

Notable Contributions/Achievements:

- Created and launched a software suite of applications using C# and C++ that interfaced with Fibos-embedded devices.
- Designed, implemented, debugged, and optimized software modules (Embedded C) for Fibos optical gain amplifier to meet expanding feature needs and customer expectations, resulting in multiple successful releases.
- Engineered and deployed a software solution using Python and an ELK Stack that provided industrial asset discovery and vulnerability assessment, supporting users in tracking inventory of relevant industrial networks.
- Architected an industrial network scanner and cybersecurity vulnerability reporter by leveraging an ELK stack.
- Accomplished a multi-year project by delivering a comprehensive package of thoroughly tested Fibos laser module software along with a set of utilities designed for seamless interaction with laser module hardware.

L3Harris WESCAM – Burlington, Ontario, CA   2017 – 2018

Global leader in the production of EO-IR imaging systems.

Systems Engineering Co-op

Conducted comprehensive regression testing on a variety of WESCAM turrets after production cycle, ensuring fulfillment of specified system requirements and proper functioning of all features. Collaborated with an external engineering firm to verify and test WESCAM turret simulators for multiple customers while presenting progress within the Systems engineering group.

Notable Contributions/Achievements:

- Maintained and improved an established software suite (C#) by enhancing automation tools employed for system testing that expanded scope and reliability of automated testing capabilities.
- Reviewed, regression tested, and reported on turret software packages prior to release facilitating the correction of issues or deviations in software behaviors and customer configurations.
- Coordinated and advised an external firm on turret simulator development in an effort to achieve feature parity with physical turrets ultimately enabling delivery of multiple qualified simulator units to customers.

Signature Projects

AWS Bootcamp   2023 – Present

- Performed implementation of a social media site by deploying a diverse range of Cloud Compute services hosted by AWS, including Cognito, Lambda, X-Ray, RDS, S3, Route 53, ECS, CloudWatch, and CodePipeline.
- Developed and deployed new applications and services by leveraging Docker and a range of technologies, such as Python Flask, React, Postgres, DynamoDB.
- Engaged in remote development, debugging, solution architecture, system-wide event tracing, authentication, and authorization of implementations, while adhering to industry best practices.
- Leveraged AWS CodeBuild, CodePipeline, and CloudFormation to establish a readily deployable infrastructure and CICD pipeline, allowing seamless development and redeployment.

Home SIEM Setup   2021 – 2022

- Conducted home network monitoring, intrusion detection system (IDS), and traffic analysis utilizing Zeek and an ELK stack for a database and dashboard.
- Tracked malicious and unexpected communications through passive analysis of network traffic.

Engineering Capstone Project - 2nd Place   2018 – 2019

- Designed multiple nodes with ability to communicate within a mesh network, collect temperature and humidity levels, and recharge through solar panels.
- Developed and deployed a WPF app exclusively for graphing and interacting with network nodes.

Education & Certifications

Bachelor of Engineering (B.E.), Mechatronics, Robotics, and Automation Engineering   2019
McMaster University – Hamilton, Ontario, CA

Azure AZ-900 Certification   2023
Certified to possess a solid grasp of fundamentals of cloud computing concepts and Microsoft Azure.