

Jordan Carlson

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Software Engineer

An outcome-driven developer with inventive development strategies, seeking work that combines disciplined engineering tactics with ambitious business growth goals.

Areas of Expertise

- Low to high-level coding and scripting
- Cohesive code development
- Unit testing and quality assurance
- Feature conception and creation
- System integration and maintenance
- Data comprehension and analysis
- Continual team collaboration
- Technical communication
- Project and product management
- Integrating tasks with documentation

Education

- **B.Eng** – Co-op Electrical Engineering - 2022 University of Victoria, BC
- **EIT Certification** - Pending final approval Engineers and Geoscientists BC

Work Experience

Lead Embedded Software Developer – Salyx Medical 2021-2025

- Led a long-term compact vital signs monitoring system development team to achieve proof-of-concept for medical-grade accuracies through state-of-the-art hardware applications and new research implementation.
- Managed Agile projects, code version control, and technical documentation.
- Directed utilizing data processing and visualization to validate and improve the grade of measurement certainties for accurate advertising and to prepare for clinical test trials.
- Prioritized debugging strategies for open-source embedded systems' optimization of resources, processing speed, power, sensitive sensor integration, and output modularization.

Embedded Software Developer/Tester – Carmanah Technologies 2022-2023

- Unit-tested embedded software systems for a safety-critical crosswalk system MVP. This revision of Carmanah's primary product was a significant success, generating \$1.6M in revenue for 2023.
- Created, tested, and optimized a Python application to set permanent ROM values during MVP manufacturing automatically.
- Developed a solar crosswalk system simulation with a measurement and automation device (with LabJack) to examine long-term, continuous system behaviours.
- Produced a complex algorithm to test large datasets for system stability and reliability.
- Debugged app-controlled Bluetooth, OpenThread and Losant MQTT IoT embedded networks, including firmware updates.

- Utilized Python scripting to continuously program an RS-232 power source for automated testing along with Tera Term serial communication.
- Collaborated with software engineers, product development managers, and the system cloud maintainer to develop test strategies for their integrated software infrastructures.
- Created and implemented efficient troubleshooting tactics with three embedded software developers, two product design managers, two hardware specialists and a cloud maintainer.
- Created and updated documentation in Confluence and managed and updated codebases using Git with Bitbucket.

Embedded Software Developer – Ergonomyx Technologies Inc.

2020-2022

- Managed a new start-up's feature development for IoT devices from MVP completion to several production waves, verifying product stability and reliability, generating \$1 million in revenue.
- Wrote approved grant applications from applied development processes.
- Granted a patent for the Ergonomyx smart workplace fitness ecosystem.
- Developed tests for UL safety inspection and certification.
- Minimalistically integrated Bluetooth, Wi-Fi, MQTT, AWS IoT Core cloud connectivity, and the proprietary Ergonomyx API's over-the-air firmware updates feature with RTOS in C and C++.

Lead Hand – Precision Well Servicing

2015-2018

- Led five-person crews to complete physically demanding, technical operation procedures.
- Coordinated the team throughout extensive days and nights, optimizing production time while advancing safety protocols and fortifying positive attitudes within the team.
- Serviced new projects, often daily, that each produce an average of \$1 million daily revenue.

Technical Specialties

- Embedded, control, and power systems
- Signal processing (filtering, amplification, feature selection and extraction)
- Object-oriented (Python, C++, Java and JavaScript) programming
- Low-level (C, ARM and Tensilica, assembly and register level) programming
- Git version control (with Gitlab, Bitbucket, Gitkraken, Sourcetree, and CLI).
- Data collection with various input protocols (JSON strings, type-packed bytes, and firmware protocols such as i2C, UART, and SPI)
- Data processing and analysis (using Pandas, numPy, sciPy, Keras, and SciKit-Learn)
- Data visualization for intuitive analysis (Matplotlib and MATLAB)
- GUI construction, utilization, and testing (Matplotlib and Qt with decoded Bluetooth input data)
- IoT management (AWS IoT Core and Losant Node MQTT, C/C++ backend)
- Project management (Agile with Jira, linked Confluence, and WeKan)

Personal Interests

- **Independent Projects:** Implementing prospective hardware, SoCs, and software frameworks.
- **UVic Rocketry Club:** Controls and instrumentation: This included development in LabView, PCB design for avionics using Altium, engine valve control in a hybrid propulsion prototype, SoC controls, and low-cost, reliable wireless networks.
- **Course Projects:** Imposed into designated leadership roles for all applicable technical groups.
- **Island Health's Code Hack 2020 and the following bid proposal:** Researched, conducted interviews, and wireframed an app utilizing Island Health's current web infrastructure to personalize health records. Then, co-led the team in curating a technical RFP response.