Michael Manning

michaelman11@gmail.com ❖ michaelmanning.ca

Experience

JIREH Industries   **March 2021 – Present**

Software Developer   *Ardrossan, AB*

- Engineered 360° imaging software with OpenCV for advanced pattern detection and environmental 3D projections.
- Designed EVE graphics controller firmware for enhanced display performance in robotic X-ray scanning operations.
- Crafted a comprehensive test automation suite that facilitated simultaneous multi-sensor data logging and analysis.
- Developed a proprietary communication protocol over CANBUS, ensuring robust and error-free data exchange.

Diesel Tech Industries   **April 2020 – March 2021**

Software Engineer   *Edmonton, AB*

- Designed a comprehensive web application and RESTful API, enabling seamless integration with Android-based ELDs.
- Devised a GPS data compression algorithm that reduced database storage requirements by 80%
- Designed a time clock web application to accurately monitor and record employee hours and job tasks.

Zaber Technologies   **May 2019 – August 2019**

Firmware Developer   *Vancouver, BC*

- Pioneered a high-precision arc traversal algorithm for motion control robotics, enabling accurate path planning.
- Developed a cross-platform real-time data plotter tool for streaming, recording, and analyzing sensor data.

AGLC   **May 2018 – August 2018**

Electronics Service Technician   *St Albert, AB*

- Repaired slot machine electronics on a component level.

Projects

G-code Workbench   **2019**

- C++ desktop application that generates tool paths using image tracing, image shading, and font approximation.
- Uses OpenCV and Tesseract for computer vision functionality and optical character recognition to automatically scan and solve word search puzzles on paper.

Piano LED Teacher   **2021**

- 3D printed LED piano interface for interactively learning music driven by ESP32 and USB host MIDI.
- Multithreaded firmware using FreeRTOS that can communicate with a companion phone app.

GLDrawer   **2019**

- Worked alongside NAIT instructors to provide a high-performance alternative to their graphics library for students.
- Created guides, documentation, and a C# interface for the underlying C++ OpenGL engine.

Skills

C, C++, C#, javascript, ASP.NET, Python, graphics programming, OpenGL, GLSL, OpenCV, CUDA, Vulkan, HTML, SQL, Git, Unity3D, Autodesk Inventor, Photoshop, embedded, firmware, algorithms, multithreading, FreeRTOS.

Education

Diploma, Computer Engineering Technology   **April 2019**

Northern Alberta Institute of Technology   *Edmonton, AB*

Bachelor, Applied Information Systems Technology   **April 2021**

Northern Alberta Institute of Technology   *Edmonton, AB*