

Software Developer 10 Years C++ Experience

Skyfish - 2019 to Present

Missoula, Montana

Drone Surveying Systems

- C++11, Linux, Javascript, C#/.NET, Winforms, HTML, CSS, JetBrains
- Sensor Integration Engineer
 - Responsible for estimating cost of custom sensor integrations
 - Whole knowledge of drone system, Electrical, Mechanical, Software, Data
 - Negotiate Features with Customer
 - 10+ Sensors: Infrared, Lidar, Visible Cameras(Sony A7R4), Multi Spectral
 - Integrate manufacturer API, Wiring Diagrams, Protocol Diagrams
- Software Release Engineer
 - Versioning, Build, Installer, Scripting, Distribution, Changelog, Update Tools
- Drone Automation
 - Pathing, PID Controllers, Sensor Operation
 - Automation of Data Gathering (minimize user interaction)
- Mavlink Robotics Messaging Protocol, ArduPilot Control Software
- Embedded/Electrical: Serial, PWM, Duty Cycles, GPIO, Radio, STM32, ARM8
- GPS systems. RTK, WGS84/EGM96, Integer Precision
- OpenLayers JavaScript Mapping Library – Google Maps, USGS Tiles
 - Cache Tiles/Zoom Level, User Interaction, Overlays, SRTM, Cache Altitude Data
- JQuery, Ajax, GET/POST/Response, Chromium/Electron, NPM, Node.js
- Software/Hardware Simulation, SITL/HITL

M.E.P.CAD - 2013 to 2018

Denver, Colorado

CAD Software, Fire Sprinkler Systems, NFPA 13, Team Lead

- Windows C++ MFC (v110-v141), Visual Studio, OpenGL, NuGet, SQL
- Speed Optimization. (Many features were unusable before my changes)
 - Live View. Decrease render time from 2s to 20ms. The feature became a major selling point
 - Refactor Primary Data Structure from $O(n)$ to $O(1)$ for our most common searches. Increasing software performance globally. Linked List to Hash Table
 - Implement batch version of functions, that don't update UI until after batch. Many features increased by ~10x speed
- Addition of MFC Tab System
- Object Oriented Tree with 50+ classes. Virtualization, Multi-Inheritance, Templates
- Hydraulic Equations: Hazen Williams, Darcy Weisbach
- Assembly level Optimization
- AutoCAD C++ API integration

Self

Home Server: UnRaid-Linux, Dockers, Libvirt VM, Team Foundation Server.

Batch File Renaming Utility (MFC): String modification, batches of files.

OBDII Data Log Viewer (MFC): Convert and View data logs from Subaru OBDII port.

OpenGL Engine: Keyboard and Mouse controls, Animated Environment.

Education

Montana Tech – University of Montana - B.S. Computer Science - 2007 to 2012

Butte, Montana

- Minors in Statistics and Mathematics