RYAN DULLAERT

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github.com/Xierumeng/ xierumeng.github.io/!!!!UPDATE

SKILLS

- Languages: C++, SQL, Bash, JavaScript, RISC-V assembly
- Technologies: Git, OpenCV, Eigen, Google Test, QNX, SQLite, TinyXML-2, Jira

EXPERIENCE

Ford Motor Company of Canada – C++, SQL, Bash May 2020 – Aug. 2020

Embedded Developer Co-op – Waterloo, ON

- Developed features for embedded devices running QNX to support Ford's Fully Networked Vehicle 2 platform
- Automated upload of incomplete event metadata from SQLite to improve error handling of interrupted events
- Implemented a service locator pattern to enable support for mock methods in 72 unit tests in Google Test
- Validated the accuracy of regex scrubbing by creating unit tests in order to comply with data protection laws

Christie Digital Systems – C++ Sept. 2019 – Dec. 2019

Engineering Assistant (Software Engineering) – Kitchener, ON

- Developed an automatic projector correction algorithm to smooth projected content on non-uniform surfaces
- Gathered accurate colour data from non-uniform screens by identifying relevant projector pixels with OpenCV
- Implemented a matrix solver with the Eigen library to generate colour corrections for every identified pixel
- Created additional unit tests for new and existing code with Google Test to minimize regressions

Shared Services Canada – SQL Feb. 2019 – May 2019

Information Management Specialist – Ottawa, ON

- Obtained asset data from the Enterprise Control Desk database with SQL queries to track government property
- Consolidated internal records to organize authoritative sources and improve security for information owners

PROJECTS

FTL Game Data Editor – C++

- Developed a C++ program to allow customization of game data files in a user-friendly environment
- Imported XML data recursively into tree data structures with the TinyXML-2 library to store game events
- Provided verification for user-created events by travelling down event trees to model their interactive stories

Space Combat Simulator – C++

- Developed a resource-management and tactical game for Windows using object-oriented programming in C++
- Implemented a Newtonian physics engine using semi-implicit Euler integration and rotation quaternions
- Modelled spaceship operations based on civilian and military research to provide an accurate simulation

uWaterloo Schedule Exporter – JavaScript

- Parsed website elements and extracted relevant text to import information into a Google Chrome extension
- Updated builder and date function to export class schedule data into an iCalendar file for students to use

EDUCATION

University of Waterloo *(Candidate for B.A.Sc. in Computer Engineering)* Sept. 2018 – Apr. 2023 (expected)

- Relevant courses: Algorithms and Data Structures, Digital Computers (RISC-V), Systems Program & Concurrency