Liam M. Murphy

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EDUCATION

Marquette University, Milwaukee, WI
Master of Science, Computing May 2021 - May 2022
Specialization: Information Assurance & Cyber Defense
Thesis: *Improving Compiler Construction Education by Retargeting and Extending a Compiler for Embedded Xinu*

Bachelor of Science, Computer Science August 2017 - May 2021
Minor: Spanish Language, Literature, and Culture

SKILLS

Programming Languages	Java, Python, C, Node.js, Scheme, ARM assembly, SQL
Software & Tools	Gherkin, LaTeX, Git, Subversion, VIM, Eclipse, Linux CLI, Oracle Database, IBM Rational DOORs, Azure DevOps, Review Board
General	Object-Oriented, Functional, and Structured Programming, Research
Foreign Language	Conversational in verbal Spanish, Proficient in written Spanish

EXPERIENCE

Astronautics Corporation of America, Oak Creek, WI June 2021 - Present
Software Engineer I

- Worked within a Scrum team to develop avionics software in C within an embedded Linux environment according to customer specifications and government certification requirements
- Produced detailed product documentation and full software life-cycle data according to federal avionics regulations
- Performed rigorous product testing to ensure performance and to exceed safety standards according to DO-178C
- Gained experience with the ARINC 665 protocol and avionics software engineering practices

Northwestern Mutual, Milwaukee, WI June 2020 - August 2020
Test Engineering Intern

- Translated business requirements into deliverables within a Scrum/Agile development environment
- Participated in Scrum ceremonies on two Agile teams
- Developed regression testing scripts using an internal automated testing framework
- Created on an onboarding application for new hires using React/Redux for Node.js

PROJECTS

ARMv7 Concurrent MiniJava Compiler August 2021 - May 2022
Master's Thesis Project

- Implemented a 32-bit ARM backend and extended language features for the Concurrent MiniJava compiler at Marquette University
- Ported MiniJava system calls into the newest version of the Embedded Xinu kernel
- Concurrent MiniJava is an object-oriented language that supports console input/output, threads, and access modifiers

Rent Always Paid August 2020 - May 2021
Senior Design Project

- Designed, implemented, and tested a full-stack web application within an Scrum/Agile development environment
- Collaborated on a team with five other students in a year-long Senior Design course
- Integrated business and technical requirements into the product from the head of a local Milwaukee startup

Functional Project Language Interpreter August 2019 - December 2019
Programming Languages Semester Project

- Incorporated functional programming concepts into the implementation of a small interpreter for a small functional language

· Gained familiarity in functional programming with Scheme/Racket

Embedded Xinu January 2019 - May 2019
Operating Systems Semester Project

· Implemented integral sections of the Embedded Xinu kernel in C and 32-bit ARM assembly
· Gained experience with real multi-core operating system concepts on real multi-core hardware throughout the semester
· Continued learning and development through an undergraduate research program during the summer of 2019

ACTIVITIES

Shannon Rovers Irish Pipe Band, Chicago, IL