Ryker Zierden

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WORK EXPERIENCE

Modeling and Simulation Software Engineer   **Fridley, MN**
BAE Systems Inc   *Apr 2023 - Present*
- Create advanced 3D modeling applications using C# and the Unity game engine
- Design advanced, searchable, and filterable data models and network interfaces to access live data from a variety of different sources, enabling engineers to see connections between data from other teams and achieving the company's goals for model-based systems engineering and digital enterprise
- Design efficient, parallel algorithms using C# Task libraries that utilize advanced concepts of asynchronous and multithreaded programming
- Work with the Qt framework in C++ to design applications and user interfaces
- Create distributed simulation experiences that run several modeling and visualization applications simultaneously, enabling communication between them using custom C++ plugins and UDP networking

Engineering Tools IT Support Analyst   **Fridley, MN**
BAE Systems Inc   *Jun 2021 - Apr 2023*
- Interfaced with CAD tool APIs to create custom automation tools to save thousands of engineering hours
- Led effort to implement at new automation tool suite to increase engineers' efficiency
- Deployed and maintained engineering software to cross-functional teams

Machine Architecture & Organization Teacher Assistant   **Minneapolis, MN**
University of Minnesota Twin Cities - CSCI 2021   *Sept 2021 - Dec 2021*
- Taught functionality of computer architecture to groups of 30 computer science students
- Led office hours, lab sections, and online forums to assist students in debugging C and Assembly code

EDUCATION

Master of Science in Computer Science   **Phoenix, AZ**
Grand Canyon University   *Oct 2022 - July 2024*
- GPA: 4.00

Bachelor of Mechanical Engineering, Minor in Computer Science   **Minneapolis, MN**
University of Minnesota - Twin Cities   *Sept 2018 - May 2022*
- GPA: 3.79
- Distinction Graduate, Dean's List (7 semesters), Marguerite Gilmore Scholarship, Presidential Scholarship

PROJECTS

Llama at Home
- Locally hosted a quantized version of Meta's Llama 2 large language model
- Created response and input parsing algorithms with the large language model to convert user requests into JSON REST API requests, which were sent to Home Assistant to make changes in a smart home

VR Haptic Fabric System
- Designed a modular haptic fabric that allows for more immersive virtual reality experiences by providing different haptic sensations to the user as well tracking their motion in 3D space
- Programmed in C and C# to enable accurate communication between the haptic modules and the Unity virtual reality experience, including serializing and transferring data via I2C and USB connections, storing and parsing configuration states in text files, and managing the module data during runtime

Near-Earth Comets Visualization
- Visualized the orbits of near-earth comets in a virtual reality application
- Designed an object-oriented data-structure in C# to store and organize comet information

SKILLS

Technologies and Programming Languages: Assembly (x86), C, C++, C#, HTML, Javascript, Matlab, Python, R, RESTful APIs, Visual Basic, VBA
Development Tools: Git (BitBucket, Github, Git CLI), Unity, Unreal, Visual Studio, Visual Studio Code, Docker
Other Skills: AR/VR/MR, Confluence, Creo Parametric, CUDA, I2C, JIRA, JSON, Llama 2, OOP, OpenMP, Qt, TCP/IP, UDP, Unix/Linux, XML, WPF