Ryker Zierden

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EDUCATION

University of Minnesota – Twin Cities, College of Science and Engineering **09/2018 – 05/2022**
Bachelor of Mechanical Engineering
Minor in Computer Science
GPA: 3.79
Marguerite Gilmore Scholarship and Presidential Scholarship Recipient

SKILLS

Programming Languages/Software: Assembly, C/C++, C#, Git, HTML, Java, JavaScript, Keras, MATLAB, NumPy, OpenCV, Python, TensorFlow, Unity, Visual Basic Application, Visual Basic Core

Analyses/Tools: Homogenous Transformations, Linear Algebra/Differential Equations, Multivariable Calculus

RELATED EXPERIENCE

Engineering Tools IT Support Analyst, BAE Systems Inc., Minneapolis, MN **06/2021 – Present**

- Save engineers hundreds of hours by automating time-intensive tasks in Creo Parametric using C++, Visual Basic Application, and a third-party VB-based scripting application
- Create powerful tools that enable engineers to extract, review, and change large amounts of CAD data for assemblies with thousands of parts
- Deploy new software and solve problems in existing engineering software

Undergraduate TA, University of Minnesota CS Department, Minneapolis, MN **09/2021 – 12/2021**

- Helped teach functionality of low-level computer architectures to class of over 200 students
- Led office hours, lab sections, and online forums to assisted students in debugging C and Assembly code

Quality Intern, Natural Resources Research Institute, Duluth, MN **06/2019 – 08/2019**

- Analyzed data to troubleshoot sensor data stream issues and optimize manufacturing process
- Created a comprehensive guide of Google Suite, using figures and descriptions to outline advanced features to less experienced users
- Modeled a small kiln in SolidWorks and highlighted several options for exhaust systems

Computer Technician, Computer Resources, Duluth, MN **09/2017 – 07/2019**

- Diagnosed and repaired a large variety of hardware and software problems on laptops and desktops down to the component level

PROJECTS

Modular Haptic Fabric, ME4054W Senior Design Projects **01/2022 – 04/2022**

- 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
- Created two Unity demonstrations to showcase the features of the software and hardware during the design show and assisted in the fabrication and wiring of the electrical box used in the demo

Near-Earth Comets Visualization Project, CSCI 5609 Visualization **02/2022 – 04/2022**

- Visualized the orbits of near-earth comets in a virtual reality application
- Designed an object-oriented system in C# to store comet data and practiced encoding data into physical mediums to make an educational and eye-catching user experience

Constellations VR Application, CSCI 5619 Virtual Reality and 3D Interaction **09/2021 – 12/2021**

- Used Unity with C# to create an interactive virtual reality astronomy application for the Oculus Quest
- Designed and implemented a new interactive object called the “Magic Panel”, which allows the user to zoom in, take snapshots, and see more information about constellations within the virtual environment