Ryker Zierden

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EDUCATION

Bachelor of Mechanical Engineering **09/2018 – 05/2022**
College of Science and Engineering, University of Minnesota – Twin Cities
Minor in Computer Science
GPA: 3.80
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**

- Write automation programs for Creo Parametric using C++, Visual Basic Application, and a third-party VB-based scripting application
- Create powerful tools for extracting and changing large amounts of CAD data in an efficient manner
- Assist in deploying new software and finding solutions to problems related to engineering software

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

- Helped teach concepts related to the functionality of low-level computer architectures
- Led office hours, lab sections, and online forums to assist students debug 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
- Worked with customers in sales and repairs and provided pleasant customer service

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

Computer Vision Lab, ME5286 Robotics **03/2022 – 04/2022**

- Trained a machine learning model to recognize 4 different types of tools using OpenCV and TensorFlow
- Implemented trained model into pick and place algorithm on UR5 robot to place tools appropriate bins