Bailey Helfer

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Professional Experience

Software Engineer

USS Vision, Livonia, MI — April 2021-Present

- Create custom computer vision applications using Python and a wide range of libraries
- Administer PostgreSQL databases, executing and optimizing SQL queries
- Develop and deploy tailor-made AI and machine learning models for machine vision
- Engineer backend server code with frameworks like Flask and FastAPI
- Leverage Docker to encapsulate and containerize dynamic applications for seamless deployment
- Collaborate in Agile development with daily stand-ups and Kanban board management
- Build custom HMIs for customer interaction in Linux and Windows environments, employing native web languages and Flutter/Dart for cross-platform apps

AutoCAD Designer

CSS Design, Wixom, MI — July 2018-September 2019

- Produced Tesla End of Arm Tools from designing to building
- Designed 3D models & annotated 2D drawings using AutoCAD
- Facilitated the designing and building physical EOAT
- Interpreted technical drawings, schematics, and computer-generated reports to revise CAD drawings

Education

Bachelor of Science in Computer and Information Science

University of Michigan-Dearborn — September 2018 - December 2022

- Concentration: Computer Science

Academic Awards:

- Best in Department Award (Computer and Information Science) for VR Wheelchair Soccer
- Alumni Advisory Innovation Award (Third Place) for VR Wheelchair Soccer

Projects

Split Detection System

- Developed a real-time split detection system for sheet metal panels, enhancing manufacturing quality control processes
- Designed and implemented a robust distributed system architecture to ensure seamless communication and efficient data processing across the split detection network
- Created an intuitive front-end Human Machine Interface (HMI) to provide a user-friendly interaction with the split detection system
- Implemented a comprehensive data analytics platform, enabling in-depth analysis and insights into system performance
- Collaborated closely with customers to understand their requirements and feedback, actively maintaining and improving the split detection system based on user needs

VR Wheelchair Soccer

- Developed a VR wheelchair soccer game using Unreal Engine and the Oculus Quest 2
- Designed and implemented gameplay mechanics and interactions using Blueprints and C++
- Implemented AI player logic to create realistic behaviors and decision-making
- Collaborated with a team of 4 developers to build the game, utilizing Jira and Github for project management and version control.

Skills

- Skilled in Python, Dart, C++, C#, Java, JavaScript, HTML, CSS
- Knowledgeable of ZeroMQ, Apache Kafka, Docker, Git, Databases, Distributed Systems
- Familiar with Engines/Frameworks such as Flask, FastAPI, Flutter, Unreal, Unity, .NET