

Bailey Helfer

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Education

University of Michigan-Dearborn

September 2018 - December 2022

Bachelor of Science in Computer and Information Science

- 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

Experience

USS Vision | Software Engineer

April 2021 - Present

- Develop custom computer vision applications using Python, OpenCV and PyTorch
- Manage SQLite, PostgreSQL databases, & SQL queries
- Train and deploy custom AI & Machine learning models for machine vision projects
- Write back-end server code using Python with Flask
- Containerize applications using Docker and Apache Airflow
- Participate in agile software development with daily stand up meetings and Kanban board management
- Architect the software and network communication for distributed systems with Apache Kafka and ZeroMQ
- Develop custom HMI's for customer interaction in both Linux and Windows environments

CSS Design | AutoCAD Designer

July 2018 - September 2019

- Produced Tesla End of Arm Tools from designing to building
- Designed 3D models & annotated 2D drawings using AutoCAD
- Hosted virtual design reviews with customers via TeamViewer
- Facilitated the designing and building physical EOAT
- Created over 200 electronic drawings using standard engineering drawing practices
- Interpreted technical drawings, schematics, and computer-generated reports to revise CAD drawings

Projects

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
- Conducted user testing and gathered feedback to iterate on game mechanics and improve overall user experience
- Collaborated with a team of 4 developers to build the game, utilizing Jira and Github for project management and version control.

SugarScope AI

- Developed a Python application for real-time image classification using machine learning models and RTSP streams from cameras.
- Used Lobe to train and export the machine learning model to be used in the application
- Trained and optimized the machine learning model using Lobe, achieving an accuracy of over 95% on the test dataset
- Utilized OpenCV to extract frames from the camera stream and feed them into the image classification model.

Skills

- Skilled in Python, C #, C++, Java, JavaScript, HTML, CSS
- Knowledgeable of ZeroMQ, Apache Kafka, Apache Airflow, Docker, Git
- Proficient with UML Modeling, Unit Testing, & Agile Techniques
- Familiar with Engines/Frameworks such as Flask, Unreal, Unity, .NET