

Bailey Helfer

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Professional Experience

Lead/Senior Software Engineer

USS Vision, Livonia, MI

June 2024-Present

- Lead development team, overseeing project architecture, code reviews, and mentoring junior developers.
- Manage project timelines, task prioritization, and resource allocation to meet customer deadlines.
- Act as the primary technical interface with customers, gathering requirements, providing updates, and delivering solutions.
- Directed development of scalable, containerized vision systems using Python, Docker, and ZeroMQ.
- Led the design and deployment of AI and machine learning models for real-time vision applications.
- Ensured code quality and maintainability by enforcing best practices and agile methodologies.

Software Engineer

USS Vision, Livonia, MI

April 2021-June 2024

- 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.
- Collaborate in Agile development with daily stand-ups and Kanban board management.
- Build custom HMIs and customer management interfaces using React for Linux and Windows environments, as well as cross-platform applications with native web technologies and Flutter/Dart.

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
- 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, OpenCV, PyTorch, Dart, C++, C#, Java, JavaScript, TypeScript, HTML, CSS
- Knowledgeable of ZeroMQ, Apache Superset, Docker, Git, Databases, Distributed Systems
- Familiar with Engines/Frameworks such as Flask, FastAPI, React, Flutter, Unreal, Unity, .NET