




OWEN ZELLER

Software Developer

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SUMMARY

Software developer with experience in fullstack applications, machine learning, and firmware design. Looking to grow and gain experience as a contributing member to a flexible, dynamic development team. Currently a Senior attending the University of Minnesota for computer science.

SKILLS

Languages: C++, C, Java, Python, x86, JavaScript, HTML, CSS, OCaml, Matlab, SQL.

Technologies: React, Next.js, Docker, MongoDB, MapReduce, Keras, TensorFlow.

Methodologies: Agile, Jira, Kanban, Software Design Patterns.

PROJECTS

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| Machine Learning | Image Compression Using K-Means Clustering github.com/Kasaar/KPress
An app that implements k-means clustering in C to provide fast lossy image compression. Designed to give the user control over the compression/loss ratio, and uses a single-header library for image I/O to optimize portability. |
| Language Parsing | Custom Parser and Prover With OCaml github.com/Kasaar/ProveML
An OCaml application that parses equalities in the OCaml programming language and writes proofs of their correctness. Handles both direct and inductive proofs based on user input. |
| Database and Web | Web Crawler & Indexer With Python & MongoDB github.com/Kasaar/zcrawler
An indexer for use in search engines and similar applications. Crawls a specified subset of the web, and uses MongoDB to store the collected data. |
| Fullstack | Drone Package Delivery Simulation hub.docker.com/r/zeller7/drone_sim
A web simulation for package delivery via drone. Written in C++ showcasing creational, structural, and behavioral design patterns. Finds paths via graph traversal, uses a queue to handle multiple deliveries, and features smart decision making for drone charging. |

EXPERIENCE

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| 4/2024-Present | Electrical Team Lead Solar Vehicle Project <ul style="list-style-type: none">Responsible for the design and manufacture of an electric vehicle's electrical systems, including custom firmware, PCBs, lithium-ion batteries, motors, and wiring.Manage several development teams consisting of over 20 members.Track work using kanban within the DevOps framework.Write C++ firmware for a variety of custom PCBs.Oversee design reviews for firmware and hardware systems.Lead weekly stand-up meetings to discuss organizational objectives and inter-team co-operation. C++ / C / PCB Design |
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| 9/2021-4/2024 | Firmware Developer | Solar Vehicle Project |
| | <ul style="list-style-type: none"> • Owned and developed embedded firmware for the control system of an electric car. • Delivered a major feature allowing the driver to switch from dual-motor drive to single-motor drive. • Structured the codebase to follow SOLID principles, allowing new features to be added without significantly modifying existing classes. • Led an initiative to fix a problematic FreeRTOS implementation. Significantly reduced unnecessary abstraction and improved run-time. • Updated the team's custom CAN library to fix a critical issue with handling repeated packets. Accomplished by rewriting a Python script that generates a C++ library. • Represented my sub-team in weekly sprint meetings. Shared our objectives with the larger firmware team and provided insight about how our system affected design decisions. | |
| | C++ / C / Python | |
| 8/2021-Present | Systems Administrator for Charter Schools | JR Computer Associates |
| | <ul style="list-style-type: none"> • Built 2 pfSense networks for two charter schools, and currently maintain them. • Manage the firewall and router for dozens of access points and cameras with high availability. • Replaced and configured 6 Cisco managed switches to route traffic between 6 floors in 2 buildings. • Responsible for annual inventory of hundreds of student devices. Automated using a PHP application to communicate with an SQL DB containing information relating to device status. • Regularly meet with client school administrators and staff to ensure client needs are being met and provide technical advice. | |
| | Linux / SQL | |

EDUCATION

Bachelor of Science in Computer Science

GPA 3.9

College of Science and Engineering

Expected May 2025

University of Minnesota - Twin Cities, Minneapolis, MN

Relevant coursework: Fundamentals of Machine Learning, Algorithms & Data Structures, Machine Architecture, Advanced Programming Principles, Software Engineering.