

Katie Wolf

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Education

Iowa State University

B.S. in Computer Engineering

- Minors in Cybersecurity, Mathematics, and Chinese Studies
- Cumulative GPA: 3.97/4.00

Ames, IA

Expected Dec 2024

Experience

Iowa State University

Undergraduate Teaching Assistant

Ames, IA

Aug 2023 – Present

- Facilitate weekly lab sessions and office hours for Computer Architecture class with over 100 students
- Teach VHDL basics and best practices to design, implement, and test digital components and datapaths
- Evaluate students' hardware design submissions and analyze simulated waveforms in ModelSim for correctness

Oracle Corporation

Software Engineer Intern

Seattle, WA

May 2024 – Aug 2024

- Created metrics to observe throttled requests in over 50 regions for the OCI Object Storage metadata layer
- Designed algorithms to migrate or shard user data across the database fleet to reduce throttling for customers
- Developed workflows in Java for the rebalancing service that query metrics and execute throttle-based sharding

Oracle Corporation

Software Engineer Intern

Santa Clara, CA

May 2023 – Aug 2023

- Developed Python scripts to achieve full codebase coverage for static code analysis on two product platforms
- Designed utility scripts for parsing and analyzing output reports, resulting in a 95% reduction in processing time
- Integrated automation scripts into the nightly build process, streamlining workflows for over 150 engineers

Collins Aerospace

Software Engineer Co-op

Cedar Rapids, IA

May 2022 – Dec 2022

- Developed and executed software verification tests on flight deck display systems for commercial Boeing aircraft
- Analyzed and updated application C code and test procedures to ensure compliance with customer requirements
- Conducted over 50 peer reviews to assess safety-critical software in accordance with DO-178B standards

Projects

ZedBoard FPGA Design

- Developed FPGA and C code for ZedBoard projects, such as drone control, image processing, and audio analysis
- Utilized custom IP cores, embedded Linux, and AXI, I2C, and SPI protocols to interface with different peripherals

Synthesized VHDL MIPS Processor

- Designed and built a single-cycle and 5-stage pipelined MIPS processor in VHDL, with 32-instruction execution
- Implemented hazard detection mechanisms in the pipelined processor, attaining a clock frequency of 49 MHz

Microcontroller-Based Robot Control

- Programmed a TM4C microcontroller in C to move a robot through an obstacle course without visual input
- Integrated ultrasonic and IR sensors on the robot for data collection, utilizing GPIOs and UART communication

Music Social Media Android App

- Developed a Spring Boot backend for a music-sharing social media application with SQL database integration
- Created REST APIs for data access and implemented real-time direct messaging using WebSockets

Skills

Programming: C, Java, Python, VHDL, Verilog, HTML, CSS, JavaScript, SQL, MATLAB, MIPS Assembly

Software: Linux, Git, Subversion, ModelSim, Vivado, MySQL, Docker, Spring Boot, Jira, Adobe Creative Cloud

Activities

Iowa State University Student Advisory Board

2021 – Present

Iowa State University Digital Women Club

2021 – Present