Seth Konynenbelt

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Education

Grand Valley State University – Bachelor of Science in Computer Engineering   Expected August 2024
- 3.93/4.0 GPA
- 2024 GVSU Computer Engineering Student of the Year
- NCAA D2 Collegiate Wrestling, NCAA Wrestling D2 National Qualifier, 3x NCWA All-American
- Minor in Computer Science and Math

Experience

Embedded Engineer Co-Op 3, DornerWorks – Grand Rapids, MI   Oct 2023 – Dec 2023
- Developed the first IP-owned Time Sensitive Networking development board demonstration as the core software engineer through collaboration with the hardware, software, and FPGA teams
- Expanded functionality for Zynq UltraScale+ MPSoC and Zynq-7000 networking solutions in C and VHDL
- Contributed to writing and completing hardware test plans for multiple custom hardware designs
- Enhanced the front-end GUI in C++ and Python by integrating a data visualization component into the layout

Embedded Engineer Co-Op 2, DornerWorks – Grand Rapids, MI   Jan 2022 – May 2023
- Improved a sensor system by developing a Bus Functional Model in VHDL to enhance the timing diagram
- Modeled sensor data in Python to understand and fix SPI protocol communication bus
- Used Xilinx Vivado simulation to debug sensor system architecture and design

Embedded Engineer Co-Op 1, DornerWorks – Grand Rapids, MI   May 2022 – Aug 2022
- Created a demonstration with a Time of Flight laser ranging sensor in C using the I2C protocol
- Updated a front-end GUI in Python by adding a relevant data visualization display to the design
- Ported an outdated chip design to the new chipset (Zynq Ultrascale+) in VHDL

Backpacking Guide, Young Life – Creede, Colorado   May 2021 – August 2021
- Led groups of 8 to 16 students through remote wilderness areas promoting safety and well-being
- Demonstrated proficiency in time management, communication, and problem-solving in a leadership capacity
- Facilitated small group discussions aimed at deepening sense a of self-awareness, identity, and significance

Small Business Owner, Kbelts Site Services – Hudsonville, MI   2017 – 2020
- Founded, owned, and operated a successful lawn-mowing small business
- Cultivated strong client relationships, ensuring exceptional service and client satisfaction
- Developed effective planning and organization crucial for business operations

Projects

Kria SOM Nerf Turret Senior Design   Jan 2024-Present
- Collaborated with a multi-disciplinary team to create hardware design, mobile app, and Nerf turret for a demo
- Led FPGA design efforts to configure Kria SoM for seamless integration with custom carrier card hardware
- Assisted in the design and implementation of two custom SeL4-based hypervisors using Petalinux for wireless video streaming and turret controls to demonstrate secure hypervisor technology
- Utilized PWM signal drivers to control a servo-based turret to shoot Nerf darts

DornerWorks Development Board   Oct 2023- Dec 2023
- Led software development to port existing DornerWorks Ethernet networking solution to custom hardware
- Designed the hardware test plan, successfully bringing up and testing the hardware
- Configured the FGPA by contributing to the VHDL code base and Xilinx Vivado block design
- Designed the hardware test plan, successfully bringing up and testing the hardware
- Wrote a QSPI flash driver for the ZYNQ-7000 System-On-Chip to improve custom hardware functionality

Skills

Technical: C, Python, embedded ARM development, Xilinx Design Suite, VHDL, Verilog, hardware and software test plan, RTOS, hardware debugging, software debugging
Leadership: GVSU Wrestling President and Captain, GVSU Young Life Vice President