

Ezechel Barsan

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Education

Milwaukee School of Engineering (MSOE) | Milwaukee, WI
ABET Bachelor of Science in Electrical Engineering

August 2022

Experience

Hardware Certification Engineer | Logicrocket Inc. | Atlanta, GA

November 2022 – January 2023

- Generated DO-254 Certification documents including: Plan for Hardware Aspects of Certification (PHAC), Hardware Description Document (HDD), Hardware Requirements Document (HRD)

Recurring Intern | Tundra Labs | Green Bay, WI

Seasonal | January 2019 – September 2022

Tundra Labs is a Tech Startup founded in 2018 to develop Virtual Reality tracking devices.

- Designed VirtualBox Ubuntu VDI with ROS Melodic on Probot Studio to control a Robot Anno 602B
- Created BOM, procured parts and built prototype designs
- Install Ubuntu in VirtualBox and configure ROS for robot arm
- Tested circuit boards using oscilloscope, DMM, logic analyzer and python scripts
- Flashed firmware and calibrated tracking of prototype virtual reality trackers
- Fixed circuit faults with soldering iron, reflow oven, reflow gun and microscope
- Set up testing apparatus for component testing
- Demonstrated functionality of projects to customers and audience
- Explained methods and procedures of diagnosis and circuit rework to external organizations

Owner | DayZ Community Game Server | Milwaukee, WI

June 2021 – November 2021

- Trained moderators, wrote Batch scripts, remotely setup 60+ mods and managed Windows Server 2016

Vice President | Google Developer Club | MSOE | Milwaukee, WI

September 2020 – May 2021

President | Advanced Technology Club | NWTC | Green Bay, WI

September 2019 – May 2020

Projects

Team Leader | Virtual Reality Controller Input Adapter | NWTC | Green Bay, WI

January 2020 – September 2020

Design an adapter to enable PS4 controllers for use with SteamVR powered Virtual Reality.

- Created 3D model in Fusion360, generated optical sensor placement JSON file with SteamVR SDK
- Programmed Arduino Zero to interface as Slave SPI to Tundra Labs VR-HDK, created device driver, calibrated IMU and Optical sensors

Volunteer | Women in Technology Wisconsin | NWTC | Green Bay, WI

Winter 2019 - Spring 2020

- Created YouTube video demo of the AdaFruit Circuit Playground with the Microsoft MakeCode IDE

Design of Logic Systems (MSOE): Designed digital logic (VHDL) using Altera Quartus, verified with RTL, and implemented using DE10 FPGA Educational Dev Board. Final Project involved design and implementation of a single-cycle processor

Embedded Systems (MSOE): Utilized IR sensors to build a robot car. The robot car slowed down when dark, stopped if object was blocking and followed a black line. Came in fourth place at the final race of the class

Digital Signal Processing (MSOE): Applied signal processing theory to modify audio signals on the FM4 Board

Senior Design (MSOE): Work as a member of team to solve a problem in community. Members are responsible for creating subsystem design specification, generating subsystem verification plans, generating a BOM, ordering parts, testing parts. Completion of Senior Design will involve integrating all subsystems to build a working prototype

Skills

Programming: Batch Script, Arduino, C, C++, OOP, VHDL, Verilog

Hardware: Analog Discovery 2, Arduino Zero, DE-10, FPGAs, Oscilloscope, Logic Analyzer, Tundra Labs Reference Design, Saleae Pro, 3D Printer, Spectrum Analyzer, Frequency Generator, Digital Multimeter, Virtual Network Analyzer

Software: Altera Quartus II, Fusion360, MATLAB, LTSpice, NI Multisim, SteamVR SDK, Rockwell Automation PLC, Microsoft Office