

Ezechel Barsan

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Objective

Electrical Engineering graduate with internship, leadership, project, and classroom experience seeking creative role.

Education

Milwaukee School of Engineering | Milwaukee, WI | GPA 2.78

August 2022

ABET Bachelor of Science in Electrical Engineering

Experience

Recurring Intern | Tundra Labs | Green Bay, WI

January 2019 – present

Tundra Labs is a Tech Startup founded in 2018 to develop Virtual Reality tracking devices. In 2021 it received \$1.38 million in crowdfunding for their Virtual Reality Tracker: Tundra Tracker

- Designed VirtualBox Ubuntu VDI with ROS Melodic on Probot Studio to control a Robot Anno SJ602-A (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
- Assembled testing apparatus for component testing
- Demonstrated functionality of prototypes and projects to customers and audience
- Explained methods and procedures of diagnosis and circuit rework to external organizations
- Created BOM, procured parts and built prototype designs

Owner | DayZ Community Game Server | Milwaukee, WI

June 2021 – November 2021

- Utilized FileZilla, Remote Desktop Connection, Task Scheduler and Omega Manager to create community game server

Vice President | Google Developer Club | Milwaukee, WI

September 2020 – May 2021

- Recruited new officer

Projects

Team Leader | Virtual Reality Controller Input Adapter | 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 to interface over SPI to Tundra Labs VR-HDK, created device driver, calibrated IMU and sensors

Volunteer | Women in Technology Wisconsin | 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: 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: 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: Applied signal processing theory to modify audio signals on the FM4 Board

Senior Design: Working as a team for a year design 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 & More

Programming: Batch Script, Arduino, C, C++, OOP, Python, ROS, Linux

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 Tracking HDK, Rockwell Automation PLC, ROS, Studio 5000

Coursework: Analog Electronics, Linear Electronics, Signals and Systems, Linear Algebra, Differential Equations, Automation