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**OBJECTIVE**

Full Time Position Focusing on Embedded Systems Signal Processing and Communications Systems

**EDUCATION**

**Worcester Polytechnic Institute, Worcester MA, Expected May 2023**

Maters of Science in Electrical and Computer Engineering

**Worcester Polytechnic Institute, Worcester MA, December 2021 *GPA 3.61***

Bachelor of Science in Electrical and Computer Engineering

**Tappan Zee High School, Orangeburg NY, June 2018**

**SKILLS**

**Engineering**: Project Management, Electrical Design, PCB Design (Eagle, Altium, and KiCad)

**Programming** **Languages**: Python, C, C++, Verilog, VHDL, MATLAB, adaptable to new languages

**Equipment**: Software Defined Radios (USRP, Pluto, HackRF One), Linux, Xilinx SoC, Arduino/Teensy

**Relevant Coursework**: Software-Defined Radio Systems and Analysis, Digital Circuit Design, Advanced FPGA Design, Computer Networks, Micro-Electronics, Introduction to Robotics, Various Computer Science Classes

**PROJECTS**

**Graduate Thesis: Software Defined Radar Waveforms, August 2022 – May 2023**

* Design a benchmark to evaluate radar waveforms using LFM as a baseline
* Apply software defined radio principles to generate new waveforms and compare performance
* Create an Machine Learning algorithm to generate better radar waveforms

**Graduate Thesis: 5G Spectrum Sensing/Sharing, October 2021 – May 2023**

* Developed a solution to overlay a non-licensed 5G network on top of a licensed provider
* Utilized real world data to create an accurate simulation using Open Air Interface

**Software Defined Radio Digital Television Transmitter/Receiver, WPI ISP, Spring 2021**

* Worked in a small team to develop a DTV Transmitter and Receiver using an ADALM PLUTO
* Utilized various specification documents to develop the transmit pipeline in python
* Began exploratory research into using the Zynq processor rather than the local pc

**Quadruped MQP Project, WPI, September 2020 – June 2021**

* Responsible for the design and implementation of the power system of the robot
* Designed and implemented a high-speed communication protocol allowing for a distributed computing approach to the project
* Designed custom PCB for Encoders and Control Board Interface
* Developed hardware and low-level code, wrapping the hardware level protocols

**“Lights Up, A Musical Cabaret”, WPI, Producer, March 2020 – October 2020**

* Produced a musical theatre production during the COVID-19 pandemic
* Adapted the format of the production multiple times throughout the planning and execution, as circumstances changed, insuring all 45 participants stayed engaged
* Collaborated with administration to create an approved safety plan, allowing the production to proceed in the adapted format

**FIRST Robotics Tappan Zee HS, Founder and Captain, September 2017–August 2018**

* Established and lead a FIRST robotics team comprised of over 50 members
* Insured proper allocation of funds in excess of $30,000 based upon the team’s goals

**CyberAuto Challenge, Warren Michigan, July 2017**

* Researched real solutions to the challenges posed by cybersecurity in automobiles

**WORK EXPERIENCE**

**Teaching/Research Assistant, WPI WiLab, Worcester, MA, March 2021 – Present**

* Research area is centered around spectrum sharing relating to 5G and Radar systems
* ECE 2305: Introduction to Communication Networks
* ECE 3311: Principles of Communication Systems
* ECE 4305: Software-Defined Radio Systems and Analysis

**Research Intern, MIT Lincoln Laboratories, Lexington, MA, June 2022 – August 2022**

* Received Secret Clearance
* Completed directed independent research relating to direction finding and 5G
* Collaboratively generated new research questions with other interns
* Furthered breadth of knowledge relating to phased antenna arrays

**Wireless Communications Intern, SHURE, Niles IL, May 2021 – December 2021**

* Worked on the FPGA team across multiple projects
* Continued development of a telemetry system to debug development hardware
* Increased efficiency of python API to allow real time parsing of data
* Developed real time visualization of signal data utilizing the API
* Began development on FPGA based serial bridge between hardware and telemetry system

**Project Engineer, Bertussi’s Plumbing and Contracting, Pearl River NY, Summer 2020**

* Helped manage multiple simultaneous multi-million-dollar school renovation projects
* Facilitated communication between the field crews, office staff, and architects
* Developed RFIs for contract clarification
* Worked with manufacturers to write submittals defending the use of alternative equal products
* Learned the mechanical industry to be able to convey information concisely and accurately

**Audio Engineer, Freelance, Blauvelt NY, Worcester MA, May 2014 – Present**

**Audio/Lighting and Technology Intern, PRG Secaucus, Secaucus NJ, Summer 2019**

**Counselor, Blue Rill Day Camp, Airmont NY, June 2015- June 2018**

**COMMUNITY INVOLVMENTS**

**VOX Musical Theatre**, September 2018 – June 2023

**President**, January 2021 - January 2022

**Technical Director**, January 2020 - January 2021

**COVID-19 Safety Committee Chair**, August 2020 - November 2020

**Skull Senior Honor Society**, November 2020 – June 2022

**President**, August 2021– June 2022

**Lens and Lights**, September 2018 - June 2023

**Active Member**, January 2019 – June 2023

**MASQUE Drama Theatre**, September 2020 – June 2022

**Member**, September 2020 – June 2022

**Underwater Hockey**, September 2018 – June 2023

**Secretary,** January 2019 - January 2020

**Member,** September 2018 – June 2022

**AYO Theatre Honor Society**, November 2020 – June 2022

**Active Member**, November 2020 – June 2022

**SOCSD Food Pantry**, Orangeburg NY, January 2020 – June 2022

**Volunteer,** January 2020 – June 2022