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## OBJECTIVE

Full Time Position Focusing on Wireless Communication and Embedded Systems

## EDUCATION

**Worcester Polytechnic Institute, Worcester MA, Expected December 2022**

Masters 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: 5G Spectrum Sharing, October 2021 – December 2022 (In Progress)**

- Developing 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
- As quoted in Shining a Light on WPI Theatre - “*Lights Up* saw students performing while wearing face coverings and with a barrier separating them from those who were working on behind-the-scenes tech. Each performance was shot separately; those that look like two students are sharing space were filmed asynchronously for safety and then superimposed in post-production. After months of adjustments, planning, and out-of-the-ordinary rehearsals, the show was streamed on VOX’s website for the first weekend in October”

**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
- 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**

- 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 2022**

**President**, January 2021 - January 2022

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

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

**Active Member**, January 2019 – 2022

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

**President**, August 2021– Present

### **Lens and Lights, September 2018 - June 2022**

**Active Member**, January 2019 – June 2022

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

**Member**, September 2020 – June 2022

### **Underwater Hockey, September 2018 – June 2022**

**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 2021 – June 2022**

**Volunteer**, January 2021 – June 2022