William Tyrrell

8 Noble St. Dudley, MA, 01571 **|** (774)-334-0777 **|** wftyrrell@wpi.edu | www.linkedin.com/in/william-tyrrell64

EDUCATION

Worcester Polytechnic Institute (WPI), 100 Institute Rd, Worcester, MA 01609   August 2021- May 2025
Bachelor of Science in Electrical and Computer Engineering. GPA 3.97/4.0
Master of Computer Science. GPA 4.0/4.0

PROJECTS

AI-Powered 3D Facial Generation for Robotics Interfaces, Major Qualifying Project   August 2024 - May 2025

- Worked with a partner to develop an AI model for generating facial video for a humanoid robot, focusing on realism and adaptability to 3D surfaces
- Developed a facial generation model using Audio2Face and Unreal Engine and mapped these faces to a flexible LCD in Blender
- Applied FVD, CLIP, and SyncNet scores to evaluate and enhance face realism, incorporating feedback into the Stable-Baselines3 reinforcement learning framework
- Future implementation into a social robot that can answer questions and provide human-like expressions and audio

Online Auction House   August 2024 - December 2024

- Piloted a team of four in a full-stack software development process consisting of use case modeling, API design, database creation/management, code development, and GUI design
- Utilized AWS resources including lambda, S3, EC2, RDS, Cloud9, Ampliffy, and API Gateway to develop a JavaScript backend
- Used NEXT.js to develop a React frontend in typescript hosted on AWS, calling the backend through REST API calls

Texas Instruments EK-TM4C1294XL Oscilloscope   October 2023 - December 2023

- Designed and implemented a feature-rich oscilloscope on a Texas Instruments EK-TM4C1294XL microcontroller, including PWM generation, ADC conversion, and real-time signal display with scalable voltage and time divisions
- Integrated RTOS functionality by refactoring interrupt-driven tasks into Hwi objects and organizing waveform, processing, and display tasks using semaphores for synchronization
- Optimized CPU utilization with DMA, significantly improving performance and enabling the implementation of more CPU-intensive features like FFT mode, frequency counter, and audio output

PROFESSIONAL EXPERIENCE

Field Engineer, Northern Construction Service LLC, 1520 US-20, Palmer, MA 01069   May 2024 - August 2024

- Responsible for daily survey layout of construction points from established benchmarks
- Monitor and document employee hours for daily job tracking and payroll reporting
- Measure and report daily production quantities to assist in the development of monthly pay requisitions submitted to MA DCR

SPS Intern, American Superconductor, 114 East Main Street, Ayer, MA 01432   May 2023 - August 2023

- Assisted in product development, modification, assembly, and testing of superconducting wire and superconducting coils used in the superconducting system
- Designed wiring diagrams and test stations for various aspects of superconductor product development
- Used Solidworks, LabVIEW, Visual Code Studio, and other software to aid in superconductor research

IT Intern, IPG Photonics, 50 Old Webster Rd, Oxford, MA 01540   June 2022 - August 2022

- Managed access privileges, control structures, and resources available to employees to prevent cyber attacks
- Helped troubleshoot issues related to IT among IPG employees
- Fixed and replaced faulty or broken computers/hardware

TECHNICAL SKILLS

Languages/Frameworks: C, Verilog, Python, TypeScript, SQL, JavaScript, HTML/CSS, React, Tailwind, NEXT,js, Node.js, GIT, MIPS
Software: Xilinx Vivado, Code Composer Studio, Solidworks, MATLAB, Visual Code Studio, LabVIEW, Multisim, AWS, Linux
Concepts/Lab Techniques: AI, Reinforcement Learning, Digital Circuits, Embedded Circuits, FPGAs, Computer Organization, Object-Oriented Programming, Database Structures, Circuit Testing, Electronic Circuit Design, Control Systems, Cryptography, Networks

AWARDS & ACTIVITIES

WPI Varsity Football Team | *Captain | First team All-Conference | Academic All-District Team*   August 2021 - November 2024
WPI Team IMPACT   August 2023 - May 2025
WPI Sigma Phi Epsilon Fraternity   August 2021 - November 2025