

IAN GUIWO

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EDUCATION

Drexel University — BS in Electrical/Computer Engineering Expected: June 2027
Minors in Computer Science and Mathematics, Pennoni Honors College GPA: 3.94/4.0

University of Leeds September 2025 - January 2025
School of Electronics and Electrical Engineering (Exchange Program) Equivalent GPA: 4.0/4.0

SKILLS

Languages C, C++, C#, Python, Java, Verilog, VBA, HTML
Tools Bash, Vim, GitLab, Qt Creator, IAR Embedded Workbench, Jira, AutoCAD, MATLAB
Hardware JTAG, Soldering, Oscilloscope, Multimeter

EXPERIENCE

EWA Government Systems March 2025 - September 2025
Software Engineer Co-op (Security Clearance: Secret) Mount Laurel, NJ

- Designed and implemented a GUI application with C++/CMake to interface with real time radar systems, processing information through pointer-based data manipulation and bit-level reconstruction
- Optimized a radar simulation program to transmit threat data via UDP, implementing multithreading and custom binary serialization to reduce latency and triple supported message types
- Collaborated within a multidisciplinary team to meet industry-specific requirements and documented updates in Jira/GitLab to ensure the application met performance standards

Raptor Defense Company July 2024 - May 2025
Electrical Engineer Philadelphia, PA

- Led the interior electrical design and power distribution architecture for LR-2 Trojan V2, a robotics rover built for autonomous landmine detection and removal
- Built and maintained peripheral devices — including metal detector and video transmitter systems — while performing appropriate updates to embedded devices such as Jetson Nano and Arduino Mega
- Extended battery life by 40% by calculating power budget and regulating peripheral power allocation to prevent voltage drops

AMETEK PDS April 2024 - October 2024
Software Engineering Co-op Harleysville, PA

- Repaired critical functionalities for power distribution systems by developing embedded C code in alignment with DO-178C (Level A) FAA Regulatory Standards, successfully pushing all updates to production
- Troubleshoot functionality issues on STM32F303/STM32F765 microcontrollers using oscilloscopes, multimeters, and JTAG to diagnose and resolve anomalies on 4 separate projects
- Wrote 3 full-stack applications in C# and Python to assist test engineers in executing acceptance test procedures
- Optimized workflow by writing technical documentation with DOORS and generating configuration files for existing products while participating in Scrum methodology

iMAPLE June 2023 - April 2024
Software Vision Team Member Philadelphia, PA

- Worked closely with Dr. David Han to develop an embedded program for a Raspberry Pi Zero 2w attached to a custom airship for Defend the Republic robotics competition

- Refined a YOLOv5 classification algorithm to identify target obstacles through continuous data collection and error analysis, reaching an overall accuracy of 92%
- Gathered and hand-labeled 8,000 images and video frames with LabelImg to prepare dataset and train algorithm

Vertically Integrated Projects (VIP) Research Program

December 2022 - May 2023

Research Assistant (Project: *The Future of Power and Energy*)

Philadelphia, PA

- Constructed 5 step-up transformers to provide testable voltages on circuit models designed to evaluate the impact of electromagnetic fields on Mavic 3T surveillance drones
- Analyzed flight data and measured electrical properties of drone components post-flight to further model development and minimize interference on internal magnetometers and RF modules

New Jersey Institute of Technology

September 2021 - June 2022

Quantum Materials Research Intern

Newark, NJ

- Processed and synthesized 6 hand-picked crystals using crystallography machines (XRD diffractometer, VSM machine) to analyze and replicate intensity patterns
- Created Python script to plot spreadsheets of magnetometer data for Fullprof visualization software, ultimately presenting findings to 60 students and faculty

PROJECTS

Personal Website | Javascript, React, Next.js, Tailwind

August 2024 - Present

- Coded a personal website to showcase portfolio, interests, etc.

I²C Music Box | C++, I²C, SparkFun Qwiic Buzzer Library

September 2025 - Present

- Configured I²C communication pins and daisy-chained buzzers on a SparkFun RedBoard Plus to emulate a music box with programmable tones and customizable polyphony

Biometric Security System | Arduino, AutoCAD

September 2023 - December 2023

- Integrated a fingerprint recognition software on a Arduino Uno microcontroller to form a lockable enclosure
- Designed and 3D printed a custom storage container on AutoCAD to promote sleekness and functionality

Computer Vision ASL Translator | Python, OpenCV, Tensorflow

April 2023 - June 2023

- Won 1st place at Drexel's First-Year Engineering Design Competition by utilizing Google's Teachable Machine algorithm to design a software that reads, identifies, and displays American Sign Language to audio and on-screen text
- Wrote a script to collect 15,000 original photos of ASL for training data, from alphabet to common phrases
- Applied OpenCV and Tensorflow library to recognize and classify data, achieving an accuracy of 89.65%

ACTIVITIES/LEADERSHIP

Jazz Band Pianist, University of Leeds, 2025

Cross Country Runner, University of Leeds, 2025

Team Captain, CHOP Parkway Cancer Run, 2024

Executive Board Historian, Filipino Intercultural Society of Drexel University, 2023 - 2024