

# Aden W. Koperczak

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Recent Computer Engineering graduate adept in C, C++, Python, and Java, seeking an Entry-Level Software Engineer position.

## Education

### Purdue University, West Lafayette

August 2020 – May 2024

Bachelor of Science in Computer Engineering | GPA: 3.49/4.0

### Pendleton Heights High School, Pendleton IN

August 2016 – May 2020

Summa Cum Laude degree (Equivalent to Academic Honors) | Top Ten Percent

## Experience

### Supercell Wx – *Contributor*

June 2024 – Present

Supercell Wx is a free and open source radar visualization application written in C++ using Qt6.

- Updated radar site locations file by pulling location from an official database using Python
- Fixed bug loading local image files on Linux
- Implemented geographic distance calculation and UI elements for a feature allowing for an audio alert to be played when a weather alert is issued within a distance of a location or radar site
- Provided support to others using Supercell Wx

### Purdue University, West Lafayette

August 2023 – December 2023

Capstone Project: Designed a portable Skee-Ball machine. Designed physical cabinet, prototyped circuitry, designed printed circuit board, soldered components, developed software, and tested final product.

### Navient Solutions, LLC – *Information Technology Security Intern*

May 2021 – November 2021

- Developed automation scripts in Python and PowerShell to streamline Configuration and Vulnerability Management report generation and improve data processing efficiency
- Solved technical scanning challenges using NMAP and Nessus, identifying & documenting system vulnerabilities
- Collaborated with IT security teams to conduct audits, remediate system vulnerabilities, and ensure compliance with security policies

### FIRST Robotics Competition (FRC) Team 447 – *Team Programmer*

December 2016 – May 2020

Each year, FRC unveils a new game challenge giving high school teams six weeks to design, build, and test up to a 125-pound robot to complete in tournaments. This includes mechanical design, programming, electrical systems, pneumatic systems, vision systems, and autonomous and teleoperated modes. Team members must work together during design, build, and test phases to deliver a robot that can meet many game challenges.

- Developed and integrated computer vision algorithms to enhance autonomous robot navigation and targeting calculations
- Implemented and tuned Proportional-Integral-Derivative (PID) control loops to achieve precise motor control
- Designed and programmed kinematic models for accurate trajectory prediction
- Programmed microcontrollers and embedded systems to manage real-time robot operations, cameras, and sensor integrations. (Arduino, Raspberry PI, NI roboRIO)
- Created and tested autonomous and teleoperated modes, ensuring robust and responsive robot performance
- Led development of analysis portions of a scouting app for Android, enabling real-time data collection and analysis to support strategic decision-making during matches (QR Codes, HTML, JavaScript, and CSS)

## Skills

C, Python, ARMv8 assembly, MIPS assembly, Git, GitHub, Java, SystemVerilog (hardware and testbench), JavaScript, HTML, CSS, Visual Basics, C++, CMD, PowerShell, Bash, LabVIEW, MATLAB, Microsoft 365, Discord, Slack, Zoom, Microsoft Teams, AES, RSA, Diffie-Hillman, Kerberos, TCP/IP, NI roboRio, Raspberry Pi, Arduino, STM32, Chameleon Vision, Software Defined Radio, GNU-Radio, English (Native), German (Intermediate), ArcSight (SIEM), Tenable IO, NMAP, Qt6

## Courses

Computer Design and Prototyping (ECE 437) | Digital Systems Senior Design (ECE 477) | Operating Systems Engineering (ECE 469) | Computer Network Systems (ECE 50863) | Introduction to Computer Security (ECE 404) | German VI: Science and Engineering (GER 323)