

JACOB BAER

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EDUCATION

Carnegie Mellon University

Pittsburgh, Pennsylvania

Bachelor of Science in Electrical and Computer Engineering with a Computer Science focus

May 2026

Minor in Artificial Intelligence

GPA: 3.75/4.00

- **Relevant Courses:** Principles of Imperative Computation, Introduction to Electrical and Computer Engineering, Electronic Devices and Analog Circuits, Physics II, Mathematical Foundations of Electrical Engineering

Community School of Naples

Naples, Florida

GPA: 4.73/5.00

May 2022

ACTIVITIES AND CLUBS

- **NCAA Division III Football Team, Carnegie Mellon** August 2022 - Present
 - Commit over 25 hours per week to games, practice, weightlifting, and film study while maintaining a full course load
- **Alpha Sigma Phi Fraternity** September 2022 – Present
- **Carnegie Mellon University Racing Team** August 2023 – Present
 - Spend weekends working in a team to collaborate on status change and firmware and their integration into a fully driverless car
 - Race our car against the best college autonomous cars in the world and consistently rank amongst the best
- **Society of Hispanic Professional Engineers** August 2023 – Present
 - Connect with other Hispanic Engineering students at Carnegie Mellon to socialize and help each other achieve our professional goals while traveling to career fairs and national conventions

PROJECTS

Internet of Things (IoT) Device Anomaly Detection through Network Traffic

- Worked alone on this project to compete in a science fair and proceeded to the state finals
- Analyzed TCP Packets on IoT devices (such as Amazon Alexas and Ring Doorbells) from a dataset with Wireshark
- Utilized Python, Scapy, and Pandas to gather and reorganize combined datasets and coded a machine learning algorithm to predict whether a particular device had been compromised based on its data

Sudoku

- Co-Led a group project by evenly distributing work by specialization and effectively allocating time
- Constructed a playable 2D Sudoku board game in Python with randomly generated screens, settings, and hints
- Created a backtracking algorithm to solve Sudoku boards in less than a second

Radio and Transmitter

- Collaborated with peers to create our own functional radio system from scratch
- Created a functional AM Radio and designed a working Audio Transmitter using basic circuitry components

LEADERSHIP AND HONORS

- 2021-2022 Florida State Science Fair Finalist
- Student Body President, Community School of Naples
- Varsity Football Captain, Community School of Naples
- Varsity Track and Field Captain, Community School of Naples

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, C, HTML, CSS

Libraries and Frameworks: Scapy, NumPy, Arduino, Scikit, Pandas

Tools: Git, Amazon Web Services, Figma

Spoken Languages: Fluent in Spanish