

# Nathanael Gaw

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## Technical Skills

- Programming Languages & Tools: C/C++, Java, Python – Pandas, PHP, Javascript, MATLAB, MySQL, VSCode
- Systems & AI/ML: Data analysis, Automation Scripting, AI Orchestration, Spec-Driven Development
- Cybersecurity: Linux (Kali), Penetration Testing (TryHackMe), Web Exploitation, Privilege Escalation, Network Reconnaissance, Vulnerability Scanning and Remediation Techniques

## Employment

**Federal Aviation Administration**, Egg Harbor Township, NJ

**AI Research Intern – NextGen AI Operations** | Summer 2024 | Details: <https://tinyurl.com/yj3knea7>

- **Collaborated** with 13-member intern team to research artificial intelligence applications for enhancing FAA air traffic management systems within the En Route Automation Modernization branch
- Developed technical expertise in AI fundamentals, machine learning algorithms, and real-world aviation implementations through hands-on research and analysis
- Executed precision calibration of photoionization detectors and conducted comprehensive air quality assessments across multiple FAA facilities
- Won Crowd Favorite Award at inaugural ITACathon competition, demonstrating innovative problem-solving, **teamwork**, and presentation skills among 50+ participants | Details: <https://tinyurl.com/3wj5dj5v>

**Federal Aviation Administration**, Egg Harbor Township, NJ

**Cloud Systems Research Intern – NextGen Technology** | Summer 2023

- Gained comprehensive understanding of FAA operations through rotational program across 8+ departments
- Led technical contributions within 12-member **research team** developing cloud-based simulation solutions
- Designed and implemented automated shell script solution for Excel data extraction and processing, reducing manual data entry time by over 75%
- Contributed to cloud-based simulation tool development, projected to save \$200K+ in equipment costs

## Projects

**Full-Stack Web Application Development:** Front-end: HTML, CSS, and JavaScript; Back-end: PHP and MySQL database

**Global Meeting Scheduler** | Details/Demo: <https://tinyurl.com/5vw8dsyb>

- Built full-stack web application for meeting scheduling across multiple time zones for international teams

**Car Rental Program** | Details/Demo: <https://tinyurl.com/yc2zzebt>

- Built full-stack web application for database creation, access, handling, keeping it normalized to 3NF, etc.

**Weather Map Analyzer** | Details/Demo: <https://tinyurl.com/2p87hsk4>

- Developed Python-based app that displays real-time weather conditions along multi-city travel routes

## Education

- New Jersey Institute of Technology, Newark, NJ | Jr. | Comp Sci | **Dean's Scholar** | 2024- | GPA: 3.83/4.0
- Atlantic County Institute of Technology, NJ | Computer Science | 2020-2024 | GPA: 4.291/4.0 | Rank: 3/404
- Current Activities: NJIT **Cybersecurity Club**, VEXU Robotics Team, Jr **Penetration Tester** (tryhackme.com)

## Awards

- **Robotics Leadership:** VEX VRC **Captain** (2022-23) | FIRST FTC **Lieutenant/Programmer** (#7149, 2019-22) | FTC | NJ State Champion (**Inspire Award**, 2021, 2022), World Qualifier (3 years) | VRC | NJ State 2nd Place & **Excellence Award**
- **Congressional App Challenge Winner** (2022) | NJ's Second District | <https://tinyurl.com/2p87hsk4>
- **Entrepreneurship:** Stockton University Business Academy | 1st Place Team (2022), 2nd Place Team (2023) | Norm Brodsky Business Concept Competition | 3<sup>rd</sup> place (2023)
- **Science Fairs:** 1st Place Computer Science (Jersey Shore, 2018) | 2nd Place (Delaware Valley, 2018)
- NJMEA 4-time **All-State** musician (2020-23): composition | orchestra (trumpet) | jazz band (trumpet & piano)
- 2<sup>nd</sup> Dan black belt in Karate | 10+ medals in World and Pan-Am Karate Championships (2016-19)