

Zaid Abu-Abbas

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Education

Bachelor of Science, Computer Science.

The George Washington University: Washington, D.C.

Expected Graduation: May 2026

GPA: 3.36

Relevant Coursework: Data Structures, Algorithms, Discrete Math I & II, Linear Algebra, Calculus I & II, Software Engineering, Systems Programming, Foundations of Computing, Operating Systems, Databases, Computer Architecture, Cloud Computing

Technical Skills

Programming Skills: Java, HTML, CSS, Python, JavaScript, PHP, Node, MySQL, Tableau, C, C++, Ruby, VueJS, JSON, R

Technologies: Eclipse, Windows, VueJS, MATLAB, Excel, Microsoft Azure, MongoDB, Postman, Databricks, Grafana, AWS, GitHub, ROS/ROS2, CAD (SolidWorks), Prefect, Ruby on Rails, Linux, Ubuntu, Raspberry Pis, Power BI, .NET

Professional Experience

Cybersecurity and Anomaly Detection in Autonomous Drones

October 2023 - Present

Research in collaboration with The George Washington University, Dr. Sibin Mohan

- Built autonomous drones, soldering ESCs, wiring motors, configuring power boards, and managing LiPo battery systems.
- Installed and tuned Cube Orange+ flight controllers and companion computers with PX4 firmware, integrating with the Vicon motion capture system for precise tracking and validation.
- Developed data pipelines to stream and preprocess flight and sensor data, and performed penetration testing/fault injection to evaluate hardware resilience.
- Embedded a neural network in PX4's EKF for anomaly detection, contributing to published research with University of Illinois PhD collaborators (2025).

Software Engineering Intern - Machine Learning & Distributed Systems

June 2025 - August 2025

Data Surge, Remote

- Built a real-time hospital monitoring system with FastAPI, Python, and Kafka, reducing hazard detection from 20 minutes to under 5 seconds
- Developed an ML infection risk predictor (Random Forest, microbatching) for near real-time sensor data analysis and risk assessment
- Created a simulation engine for 14 crisis scenarios (HVAC failures, outbreaks, equipment issues), enabling realistic staff training without patient risk
- Designed a fault-tolerant distributed system with 99%+ uptime and scalable, config-driven operations using YAML thresholds and SVG visualizations

Projects

Mock Minuature Linux Powershell: [GitHub](#)

October 2023 - December 2023

- Led a project to create a Linux Shell replica, developing eight programs to mimic shell functionality using C/C++ programming and Linux expertise.
- Engineered an advanced shell capable of handling hundreds of commands, file redirection, and query autocompletion.
- Enhanced skills in systems programming and algorithmic design, deepening understanding of Linux environment intricacies.

ChatGPTTravel – AI-Powered Optimized Travel Itineraries: [GitHub](#)

September 2024 - May 2025

- Built a web service that generates personalized travel itineraries based on user preferences (cost, ratings, travel time)
- Integrated generative AI (ChatGPT) with external APIs (Yelp, Foursquare) to suggest and validate destinations and activities
- Applied combinatorial optimization algorithms to create efficient, cost-effective, and highly rated travel plans

Leadership and Professional Development

Co-Founder and Mentor

April 2023 – Present

RevolutionaryTech Club

- Co-founded a student organization to empower underclassmen in tech.
- Led workshops on resume building, branding, and technical skills.
- Facilitated hands-on projects for practical experience and resume enhancement.
- Voted Science & Engineering Organization of the Year for the 2024 - 2025 school year