Nevien A. Udugama

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EDUCATION

California State University, Fullerton (CSUF) **Fullerton, CA**
B.S. in Computer Science *May 2026*

- **Concentrations:** Intelligence & Modeling/Simulations
- **Related Coursework:** Introduction to Programming C++, Object-Oriented Programming, Data Structures, Computer Organization and Assembly Language, Compilers and Languages, Algorithm Engineering, Operating System Concepts, Software Engineering, Linear Algebra, Discrete Math

Cypress College **Cypress, CA**
Cyber Security Certificate *Fall 2020 – Spring 2022*

- **Concentration:** Cyber Security
- **Related Coursework:** Cisco Networking, IT & Cybersecurity Fundamentals, Network Security, Ethical Hacking, Python Programming

SKILLS

Programming: C++, Python, x86, JavaScript, HTML, CSS
Frameworks: OpenCV, YOLOv8, Matplotlib, Numpy, Pygame, React, Cvzone, Mediapipe, PyQT
Tools: VScode, Jupyter Notebook, Git, Linux, Ubuntu, CISCO, Firebase, Microsoft Office, AWS

EXPERIENCE

BoundaryRSS (https://www.boundaryrss.org/)
Leader Developer/Researcher *May 2024*

- Developed and researched into a UAV swarm AI model
- Assisted in the integration of the module with the software and Raspberry Pi AI HAT

PROJECTS

Airplane Motion Simulation (https://github.com/ne246/Airplane-Motion-Simulation)
Developer *Sept 2024*

- Accomplished an accurate simulation of airplane motion, as measured by the ability to model various flight paths and behaviors mimicking real-world dynamics, by designing and implementing a Python and Matplotlib-based tool that utilized equations of motion to create customizable simulations of airplane speed, trajectory, and altitude, and developed interactive visualizations with dynamic animations and real-time data updates to enhance both educational and practical applications.

Virtual Ping-Pong Game (https://github.com/ne246/Virtual-Ping-Pong-Game)
Developer *Nov 2024*

- Built an interactive ping pong game with real-time hand tracking, demonstrated by its ability to accurately detect hand movements, collisions, and scoring in a responsive and immersive game environment, achieved through Python, OpenCV, and Cvzone. Integrated NumPy for precise calculations, ensuring smooth and realistic gameplay mechanics, and enhancing player engagement through dynamic graphical overlays that blend live video feeds with digital elements for an intuitive and interactive experience.

GeoFind (WIP)
Developer *Dec 2024*

- Developed a web-based object detection scavenger hunt game, demonstrated by its ability to let users explore geographic areas and identify objects in real-time, achieved through Python, HTML, CSS, and JavaScript. Leveraged Google's Street View API for seamless navigation and the Street View Static API for capturing images, while implementing an object detection pipeline using OpenCV, YOLOv8, and Flask to analyze and verify user submissions, creating an engaging and educational interactive experience.

ACTIVITIES AND LEADERSHIP

ACM at CSUF **Fullerton, CA**
Member *May 2022 – Present*

- An active member, enjoying working with my peers and learning new concepts, improving my ability to problem-solve and work in a team environment