Tai A. Williams

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EDUCATION

University of Central Florida Expected Graduation: Dec 2027
Bachelor of Science in Computer Engineering **GPA: 4.00**
- Burnett Honors Scholar on Provost Scholarship

Florida State College at Jacksonville Graduated: May 2024
Associates of Arts Degree - High Honors **GPA: 4.00**
- Dual Enrollment

Relevant Coursework: Computer Science 1, Differential Equations 1, Physics 2, Engineering Analysis and Computation

SKILLS

Languages: Python, C, Verilog, C++, C#, Java, SQL, HTML, CSS, Javascript
Software: Excel, Office, Git, APIs, Linux
Hardware: Microcontrollers, Sensors, Breadboard Prototyping
Interpersonal Skills: Problem Solving, Critical Thinking, Adaptability, Time Management, Communication, Leadership, Research

WORK EXPERIENCE

Backend Engineering Associate *Jun 2025 - Aug 2025*
Laboratory for Interaction of Machine and Brain (LIMB)
- Building infrastructure to power a platform to allow users across the globe to connect, share, and record historical data
- Taking advantage of Amazon Web Services (AWS) to develop scalable and secure systems for the platform
- Developing cross-team capstone project combining data analytics, server-side development, and marketing

Undergraduate Research Assistant *Jan 2025 - Present*
Laboratory for Interaction of Machine and Brain (LIMB)
- Researching methods to improve fault tolerance within robotic systems by incorporating multi-modal sensor integration with different forms of reinforcement learning
- Operating with an Unitree Go1 robot dog for testing and simulation purposes
- Using Python and ROS to develop different methods of training devising an effective policy balancing speed and stability

PROJECTS

Finance Tracker Web App *Apr 2025 - May 2025*
Personal Project
- Used Django Framework to develop full-stack web application for tracking expenses, transactions, and budgets
- Crafted databases capable of cross-referencing users and the data associated with them to perform queries to obtain data
- Implemented registration, login, logout with authentication to prevent unauthorized access to protected data within the server

Digital Circuit Error Analysis *Feb 2025 - Apr 2025*
Personal/Class Project
- Researched and translated various error correction/detection methodologies into Verilog modules
- Defined testbenches to validate the output of the created modules against established values to ensure correctness
- Wrote a research paper to explain, analyze, and compare the algorithms used under similar conditions
- Discussed the responsiveness of different modules under various error probabilities to determine the efficiency of each

CHIP-8 Virtual Machine *Jan 2025 - Mar 2025*
Personal Project
- Developed C-based virtual machine for simulating microprocessor running a variety of CHIP-8 ROMs using SDL2
- Implemented multiple systems running in parallel to process and execute commands from loaded memory
- Adapted project to be used as basis for simulation/visualization of future projects by increasing the modularity of the virtual environment I have developed

Autonomous Drone *Aug 2024 - Present*
ACM Project | Embedded Systems Division Lead
- Developing videography drone using computer vision while performing obstacle avoidance with variety of sensors
- Collaborating with the hardware team to integrate 30+ LiDAR and ultrasonic sensors with our ESP32 development board to intake the drone's surroundings for path generation.
- Will converge with flight design team to integrate AI-generated flight path with object avoidance to complete project

PROFESSIONAL AFFILIATIONS

Institute of Electrical and Electronics Engineers (IEEE) *Aug 2024 - Present*
- Participate in meetings, projects, and workshops alongside hundreds of electrical and computer engineers
- Collaborate in technical workshops to learn and collaborate with others

Junior Civitan *Aug 2021 - May 2024*
- Served as vice president with a primary mission of helping children with developmental disabilities
- Organized biweekly club meetings, community service events, fundraisers, and social events across a 50+ person organization and leadership board.
- Performed over 120 hours of community service, raised hundreds of dollars, and collected approx. 100 donations for children and the homeless