Dylan Wilkins

dylandwilkins@gmail.com | linkedin.com/in/dylwilks | github.com/dylandhw

EDUCATION

University of Central Florida   Orlando, FL
B.S. in Computer Science, Minor in Statistics. GPA: 3.78   *May 2027*

EXPERIENCE

Research Assistant - Software Engineering   April 2025 - Present
DRACO Lab   *Orlando, FL*

- Prototyped **computer vision algorithms** in **Python** to analyze satellite imagery for real-time flood detection, leveraging **memristor-based systems** for **low-latency state retention**.
- Built and tested **image-processing pipelines** to benchmark detection accuracy under varied conditions, guiding design of **onboard satellite AI**.
- Synthesized literature on **novel computing hardware**, contributing to the conceptual framework for technology integration.

Vice President   May 2024 - Present
Association for Computing Machinery UCF Student Chapter   *Orlando, FL*

- Designed and delivered **hands-on workshops** on **computer vision** in **Python**, independently creating all instructional materials and codebases, engaging **20+ members per session** and fostering applied AI skills in the chapter.
- Spearheaded the chapter's strategic shift toward a **research-focused model** in collaboration with **UCF research labs**, implementing higher-quality software engineering standards, initiating a **grant program to fund student-led research projects**, and matching students with labs across the university.
- Expanded chapter outreach by building relationships with **industry professionals**, securing multiple **guest-speakers and engineers** for general body meetings, and strengthening ties with software companies.

PROJECTS

OrbitAI | *Python, PyTorch, Flask, C#, AWS EC2, Unity, Git*

- Designed and deployed a **cloud-hosted GRU model** on **AWS EC2** with **Flask-SocketIO**, predicting **180-step satellite trajectories** in real time using training data parsed from **60,000+** TLE datasets.
- Integrated a custom **Unity 3D orbit simulator** with WebSockets to visualize live predictions and test collision avoidance, supporting **1,000+** simulated satellites in large-scale stress scenarios.
- Architected a scalable AI pipeline using **Graph Neural Networks (GNN)** to identify high-risk interactions between satellites, reducing false-positive collision alerts by **35%** during simulation testing.

Certification Blockchain System | *Golang, Rust, PostgreSQL, React, Git*

- Built a tamper-proof blockchain system using **SHA-256 hashing**, processing **100+ student certifications** with immutable audit trails and real-time verification capabilities.
- Built a full-stack web app with **REST APIs, PostgreSQL persistence, blockchain serialization**, and a responsive UI.
- Engineered blockchain integrity validation algorithms using **hash consistency checking**, and **chain validation protocols** in **Rust**, ensuring data authenticity and preventing unauthorized modifications across the distributed ledger.

Moodsic | *Python, Django, Typescript, React, OpenCV, Git*

- Built a real-time emotion recognition pipeline using **Python** and a custom **CNN**, detecting user mood from webcam input with **95% accuracy**.
- Integrated the **Spotify Web API** in **Flask** to recommend tracks based on detected emotion, handling **OAuth authentication** and API rate limits.
- Developed a responsive **TypeScript/React** frontend with **high-bitrate streaming**.

TECHNICAL SKILLS

Languages: Python, Golang, C#, C, Java, Rust, Dart, Typescript, SQL, PostgreSQL, MySQL
Frameworks: React, Django, FastAPI, Flutter, ONNX, Ollama
Developer Tools: Git, Gitlab, Github, Docker, CI/CD, AWS, Postman, Firebase, Unity, Figma