Dylan Wilkins

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Education

University of Central Florida Orlando, FL
Bachelor of Science in Computer Science, Minor in Statistics *August 2023 – May 2027*

Experience

Software Engineering Research Intern April 2025 – Present
DRACO *Orlando, FL*

- Prototyped **computer vision algorithms** in **Python** to analyze satellite imagery for real-time flood detection, leveraging theoretical **memristor-based systems for low-latency state retention.**
- Researched **homomorphic computing** and performed **memory leak detection and remediation** in **C and C++**, contributing to more securea and efficient data pipelines for constrained environments.
- Built and tested personal **image-processing pipelines** to benchmark detection accuracy under varied conditions, for onboard satellite AI systems.

Vice President May 2024 – Present
Association for Computing Machinery *Orlando, FL*

- Designed and delivered **hands-on workshops** on **computer vision** in **Python**, independently creating all instructional materials and code bases, engaging **30+ 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.
- Facilitated a **Blue Origin** sponsored **autonomous drone project**, rebuilding and organizing the team structure while guiding members through **hands-on design, testing, and development**.

Projects

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

- **2nd place winner** of Knight Hacks 2025 **Project Launch**, surpassing **150+** other competitors.
- Designed and deployed a **cloud-hosted GRU model** on **AWS EC2** with **Flask-SocketIO**, prediction **180-step satellite trajectories** in real time using training data parsed from **60,000+ TLE datasets**.
- Integrated a custom **Unity 3D orbit simulation** with WebSockets to visualize **live predictions and test collision avoidance**, supporting **1,000+ simulated satellites** in large-scale stress scenarios.

Mosaic | *Python, PyTorch, FastAPI, Apache Kafka, PostgreSQL, Docker, Kubernetes, D3.js*

- **Built a distributed multilingual NLP pipeline** that ingested and processed **50k+** daily news headlines across **English, Spanish, and Chinese** via **Kafka** streaming, enabling real-time global sentiment tracking.
- Applied transformer-based sentiment models, **FinBERT + XLM-RoBERTa**, fine-tuned on financial text, achieving a **20% higher correlation** with short term equity moves.
- Developed **lag-correlation analytics and interactive dashboards** in **D3.js** to visualize sentiment-market dynamics, providing insights into news-driven shifts within **15 minutes of release.**

Certis | *Golang, Rust, PostgreSQL, React, Docker, Git*

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

Technical Skills

Languages: Python, Golang, C, C#, C++ Java, Rust, Dart, Typescript MySQL, PostgreSQL
Frameworks: React, Django, FastAPI, Flutter, ONNX, Ollama
Developer Tools: Git, Gitlab, Docker, Linux, CI/CD, AWS, Postman, Unity, Figma, Photoshop
Libraries: scikit-learn, PyTorch, TensorFlow, Keras, Numpy, Pandas, OpenCV