Liam Schmidt

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EDUCATION

The Ohio State University — Graduating May 2028
B.S. in Computer Science and Engineering; Minor in Mathematics — GPA: 4.0/4.0
Selected Coursework: Data Structures & Algorithms, Computer Systems, Discrete Mathematics, Theory of Computation, Calculus I–III (Honors), Linear Algebra (Honors), Probability & Statistics.

Honors: National Buckeye Scholar (2024–Present), Dean's List (2024–2025).

TECHNICAL SKILLS

Languages: Java, Python, C++, C, JavaScript, MATLAB, HTML/CSS
Frameworks & Libraries: React, Next.js, PyTorch, OpenCV, ROS2
Cloud & Databases: Google Cloud Firestore
Other: Linux, Algorithms & Data Structures, Git, Neural Networks, Geospatial Computing (PyProj, EXIF)

EXPERIENCE

The Ohio State University — Department of Computer Science — Aug 2025 – Present
Undergraduate Teaching Assistant — *Columbus, OH*
- Worked directly with **40 students** in Software II, instructing implementation of data structures in Java and reinforcing core programming concepts.
- Performed large-scale code review and grading (approximately **200 projects** per semester) and hosted **4+ hours** of weekly office hours.
- Improved overall student performance, increasing project grades by **8%** and exam scores by **6%** through targeted instruction and review sessions.

Buckeye Vertical — Software Team — Aug 2025 – Present
Autonomous Drone Software Developer — *Columbus, OH*
- Led a team of **3 students** to develop a GPS image stitching pipeline in Python (OpenCV, EXIF, PyProj), achieving **90% positional accuracy** on 50+ images.
- Developing a simulation tool in **Gazebo** with **Foxglove/RViz2** to test camera image stitching independently.
- Collaborating with avionic and mechanical teams to integrate software modules for upcoming UAV flight tests and competitions.

PROJECTS

Drone Swarm Simulator | *C++, SDL3, CMake* — October 2025 – Present
- Developing a 2D drone swarm simulator in **C++** with visual rendering using **SDL3** to model emergent flocking behavior using the Boids algorithm (separation, alignment, cohesion).
- Implemented a custom 2D vector math and physics engine to handle agent movement.
- Implementing a **Quadtree-based spatial partitioning system** to optimize neighbor detection and improve simulation scalability.

Fleet Management Web Application | *Next.js, React, TypeScript, Google Firestore* — June 2025
- Built a web application to manage a fleet of **19 Cirrus aircraft** for Mike Goulian Aviation Flight School, digitizing aircraft status and task workflows for staff.
- Enabled real-time data synchronization via Google Cloud Firestore, improving staff productivity and removing page-refresh requirements.
- Increased operational efficiency for **10 staff members** by centralizing aircraft status, tasks, and scheduling.

Error-Correcting Decoder for Noisy Channels | *Python* — September 2025
- Designed an error-correcting decoder to reconstruct ASCII messages transmitted through a noisy binary channel using generator and parity-check matrices.
- Applied linear algebra and syndrome decoding techniques to detect and correct bit flips, and built end-to-end encode/transmit/decode algorithms.

EXTRACURRICULARS

Big Data Analytics Association — Aug 2025 – Present
Participant — Foundations of AI Project Series — *Columbus, OH*
- Collaborating in a team of three to build an **LLM-based predictive model** for stock market data, including data preprocessing, fine-tuning, and evaluation.
- Designing an **end-to-end AI pipeline** that incorporates model training, performance evaluation, and deployment considerations for applied financial forecasting.