Logan Shaffer

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EDUCATION

Embry-Riddle Aeronautical University — Daytona Beach, FL

B.S. in **Engineering Physics**, Spacecraft Instrumentation Track, Minor in **Electrical & Computer Engineering**

WORK EXPERIENCE

Embry-Riddle Aeronautical University — Daytona Beach, FL
Extended Reality (XR) Developer — May 2025 – Present
- Develop the "Immersive Flight Dynamics" program in **Unity**, implementing a **UDP server** to facilitate communication between the application, external **Python** scripts, and a **YAW Motion Simulator.**
- Integrate **JavaScript** for asynchronous file I/O operations and processed live ATSB data for real-time simulation accuracy.
- Collaborate with faculty and experienced professionals to iterate on **UX design**, improving simulation immersion and developing robust backend safety protocols for edge-case scenarios.
- Incorporate **Agile** methodologies to manage development cycles, utilizing **Git/GitHub** for version control ensuring maintainable, high-quality code.

Research Experience for Undergraduates (REU) Intern, *"A Versatile Synthesis of Self-Healing Polymers"*   May 2024 – Jul 2024
- Developed **Python** scripts to automate force and distance data analysis, reducing weekly processing time by **10+ hours**.
- Conducted material characterization of self-healing PDMS polymers through tensile testing and experimental refinement.

UNIVERSITY PROJECTS

Embry-Riddle Aeronautical University — Daytona Beach, FL
Senior Design Project, *mDLP (miniature Double Langmuir Probe)* — Aug 2025 – Present
- Engineer a real-time scientific data acquisition system using **Python** and **MVC Pattern** to process scientific measurements intended for ionospheric research and plasma physics.
- Implement asynchronous data flow to handle direct serial communications and high-speed simulation fallbacks.
- Design a threaded process manager to coordinate data sources, recording, and playback, ensuring high performance.

Junior Design Project, *Ball Balancing Platform* — Jan 2025 – Apr 2025
- Programmed inverse kinematics and **PID control algorithms** in **C++** using **Arduino** to achieve precise autonomous platform control capable of balancing a steel ball atop itself.

Microcomputers & Electronics Final Project, *Project S.H.I.N.E* — Jan 2025 – Apr 2025
- Created a CubeSat adjacent light tracker using **C** and an **AVR microcontroller**, implementing real-time telemetry to monitor power, thermal, and orientation data via a remote monitoring station.

LEADERSHIP & INVOLVEMENT

Embry-Riddle Aeronautical University — Daytona Beach, FL
Tau Beta Pi Engineering Honor Society, *Corresponding Secretary* — Nov 2024 – Present
- Facilitate communication between executive officers and members while managing the chapters' administrative workflows.

Omicron Delta Kappa National Honor Society, *Vice President* — Apr 2024 – Present
- Organize monthly operations and partner with diverse campus groups high-impact leadership development programs.

Student Union Advisory Board, *Point of Contact* — Nov 2022 – Present
- Leverage data-driven feedback to secure **$12,000** in funding for major student events, increasing engagement by **60%.**

Physics Tutor and Supplemental Instruction Leader — Sept 2023 – Sept 2025
- Mentored groups of **40+ students** in complex technical concepts, resulting in a 9% increase in student pass rates.

SKILLS

Programming Languages: Proficient in C#, Python, JavaScript; Intermediate in C++, C, HTML, CSS, Julia
Software & Simulation: Unity 6, Blender, CATIA, WebGL, Three.js, Cesium, Node.js, REST APIs
Systems & Engineering: Data Structures, Algorithms, OOP, Agile/Scrum, Git/GitHub, MVC Pattern, Telemetry, Flight Dynamics
Hardware & Embedded: AVR Microcontrollers, Arduino, PID Control, Inverse Kinematics, UDP/Serial communication