Alen Seferovic

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Education

Purdue University – B.S. Aeronautical and Astronautical Engineering May 2026
GPA: 3.95/4.00
Coursework: Aircraft Design, Intro to CFD, Computational Aerodynamics, Aerodynamics, Fluid Mechanics, Structural Analysis, Aerospace Propulsion, Control Systems

Projects

DBF Airframe Design Aug 2025 – Dec 2025

- Designed the aircraft wing structure using MATLAB-based beam, shear flow, and buckling models to size spars, stringers, and ribs, reducing wing weight by 200 grams and increasing stiffness
- Created and optimized wing geometry in Siemens NX, fully modeling joints, bolt patterns, and component interfaces to de-risk manufacturing, resulting in reduced build time with near-zero-rework
- Validated airframe performance through flight testing, achieving a full mission flight of 2.5 minutes carrying 500 gram payload and avionics equipment while maintaining stable telemetry and control

Firefighting RC Aircraft May 2025 – Aug 2025

- Designed and built a low-cost aircraft using Siemens NX mass modeling and XFLR5 simulations to achieve stable, repeatable flight while carrying thermal and environmental payload for wildfire monitoring
- Integrated the Raspberry Pi sensing subsystem by soldering a regulated 5V/5A power splitter and mounting all components, enabling reliable atmospheric and IR data collection with real-time visualization during flight
- Implemented a self-stabilizing flight controller to reduce airframe loss risk, ensuring repeatable, controlled flight tests and saving on airframe repair and replacement costs

Finite Wing Wind Tunnel Test Nov 2024 – Dec 2024

- Conducted an experiment to test wing models with varying span and wingtip design in a subsonic wind tunnel, investigating performance and applying aerodynamic theory to inform model selection
- Collected aerodynamic data using LabVIEW and load cells, processing lift and drag measurements to validate finite wing theory and investigate effects of changing wingspan and winglet design
- Presented results in a formatted technical report, outlining experimental setup and procedure while investigating potential applications and possible sources of error

Experience

Teaching Assistant, Purdue University – West Lafayette, IN Jan 2025 – Present

- Hosted weekly office hours to provide individualized support on undergraduate aerospace engineering topics, clarifying concepts and guiding problem-solving across courses
- Collaborated with the teaching team to develop exam materials aligned with course objectives
- Responded to student questions on online discussion boards by providing clear and concise explanations of technical concepts

Intramural Official, Purdue University – West Lafayette, IN Aug 2024 – Nov 2024

- Effectively managed games and made quick, accurate decisions under pressure, ensuring fair play and adherence to rules for up to 22 players at a time
- Communicated rules clearly and resolved conflicts between players to maintain a positive and fair environment
- Maintained game records, tracked player behavior, and ensured compliance with league regulations

Skills

Practical: Wind Tunnel Testing, RC Aircraft Design, Prototype Testing, Experimental Setup, Soldering
Software: MATLAB/Simulink, Siemens NX, ANSYS Workbench/FLUENT/Mechanical, XFLR5, Python, Excel