DAVID SURA

Mechanical Engineering | Autonomous Systems | Aviation Operations
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EDUCATION

University of Illinois Chicago (UIC) - B.S. Mechanical Engineering | **Expected May 2028**
GPA: 4.0/4.0 | 68 credits completed | Dean's List every semester | U.S. Citizen
Relevant Coursework: Dynamics, Strength of Materials, Thermodynamics, Statics, Structural Analysis, Engineering CAD Design, Computer Programming, MATLAB
Leadership: Peer tutor/mentor in Differential Equations, Dynamics, Thermodynamics, and Strength of Materials | ASME | Chicago Engineering Design Team

DESIGN & SYSTEMS PROJECTS

Autonomous Payload Drone - Mechanical Designer **Fall 2025 - Present**
Autonomous Robotics and Systems, UIC | Chicago, IL

- Engineered a carbon-fiber drone structure for an approximately **30 lb payload**, reducing vehicle mass from **15 lb to 9 lb (40%)** through roughly 10 design iterations.
- Performed approximately **100 calculations** spanning thrust, peak power, endurance, battery configuration, dimensions, and mass; selected three batteries in series for mission power requirements.
- Used SolidWorks Simulation to evaluate arm bending and motor-mount deformation; designed the frame, electronics mounts, and motor mounts while integrating requirements across an **8-person team**.
- Supported job-shop prototyping using laser cutting, 3D printing, and CNC machining, translating analysis into manufacturable components.

DasuraGo Electric Freight Network Planning Simulator **2026 - Present**
Independent Project | In Development

- Architecting a deterministic Python/TypeScript platform with FastAPI, Next.js, PostgreSQL/PostGIS, NumPy, Pyomo/HiGHS, and discrete-event simulation to model electric-truck physics, routing, payload, SOC, charging, grid limits, weather, refrigeration, and fleet resources.
- Formulates constrained tradeoffs across cost, speed, emissions, energy, charging delay, driver time, infrastructure utilization, lateness risk, and battery reserves with reproducible models and data provenance.

ENGINEERING & OPERATIONS EXPERIENCE

Export Agent **Apr 2026 - Present**
Unifi Aviation, LLC / American Airlines | Chicago, IL

- Coordinate cargo readiness for **5 daily flights**, staging approximately **100,000 lb per day** while balancing weight, volume, timing, and ULD constraints.
- Inspect dangerous-goods shipments and verify ULD assignments, weights, and documentation; resolve **2-5 discrepancies weekly** before operational lockout, typically 2 hours before departure.
- Improve network utilization by advancing freight to earlier flights and repositioning empty ULDs; collaborate with cargo managers, warehouse, ramp, and dispatch teams in an FAA-audited environment.

AI Trainer and Prompt Engineer - STEM, Logic, and Finance **Oct 2025 - Present**
Handshake and LinkedIn AI Projects | Remote

- Completed approximately **300 evaluation tasks across 10 projects and 200 hours**, earning quality results in the **top 5%** while assessing model reasoning, factual support, and instruction adherence.
- Designed rubrics and graded text and multimodal outputs (video, images, graphs, PDFs), identifying hallucinations and unsupported logic across math, physics, federal tax, reconciliation, and budgeting tasks.

Founder and Digital Consultant **Jan 2026 - Present**
Independent Freelance Practice | Chicago, IL

- Deliver websites and digital campaigns for local service, consulting, chiropractic, and restaurant clients, owning requirements through handoff; clients typically report **2-3x growth in Google Maps traffic** and increased customer activity.

TECHNICAL TOOLKIT

Mechanical Design: SolidWorks part/assembly modeling, engineering drawings, mass properties, interference/clearance checks; SolidWorks Simulation/FEA (static stress, deformation, mesh/result interpretation); AutoCAD, GD&T, DFM, BOMs, rapid prototyping
Analysis & Systems: MATLAB/Simulink, dynamics, kinematics, structural analysis, center of gravity, thrust/power/endurance calculations, requirements integration, root-cause analysis
Programming: Python, TypeScript, C/C++ (Arduino), Java, SQL, Git, FastAPI, Next.js/React, PostgreSQL/PostGIS, NumPy, Pyomo/HiGHS