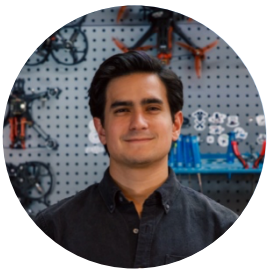
DAVID LOBO

Mechanical Engineer

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Work Portfolio



EXPERIENCE

Lead Mechanical Engineer, Eclipse Program
06/2024 – Current

Hextronics (Aerial autonomy startup) — Miami, FL

- Led the Eclipse drone-in-a-box program end to end (Helios quadcopter and Luna autonomous dock), directing a team of 6 across mechanical, thermal, and structural scope, and delivering a working system to public launch at CUAV.
- First-named inventor on 2 patents covering the Helios and Luna dock architecture, including the centering and contact charging interface.
- Owned systems engineering across mechanical and electrical, working directly with the software team to define and integrate the full custom electronics stack.
- Designed and validated the Helios airframe, driving material selection through FEA and modal analysis to place first bending mode in a subcritical window.
- Built the propulsion and flight-performance model used to size motors, propellers, battery and to set weight targets, TTW ratio, and MTOW. CFD-validated drag decomposition and landed within 7% of flight-test results.
- Played a key strategic role in defining product direction, customer requirements, and go-to-market plans in collaboration with the executive team.
- Led concept design of a high-speed interceptor UAV (1 kg payload, 15 km range, 305 km/h burst speed), covering initial configuration, dynamic stability analysis, propulsion sizing, and component selection.
- First ME hire for Atlas and Universal stations capable of swapping batteries and relaunching in under 2 minutes.
- Led the transition from early-stage prototype to scalable product, solving key issues in thermal management, system integration, and reliability under continuous deployment.

Manufacturing & Process Engineer Co-op
06/2023 – 12/2023

TESLA — Austin, TX

- Automated high-speed manufacturing systems, reducing the primary source of daily unplanned downtime by 26% and boosting production throughput by 11% to meet growing demand.
- Collaborated with cross-functional teams to drive process improvements, focusing on workflow optimization and aligning production strategies with operational goals, gaining valuable insights into large-scale mass manufacturing.

High Speed Filming Drone
2024 – Present

Northeastern University (Capstone Project) — Boston, MA

- Led the design, prototyping, and testing of a high-speed drone optimized for capturing footage of race cars traveling at speeds exceeding 400 kph.
- Performed wind tunnel tests, advanced CFD and FEA to optimize aerodynamics, structural integrity, and thermal performance.
- Received the "Best Capstone Project" award and gained recognition through a published article highlighting the innovative and groundbreaking capabilities.

Mechanical Design Engineer Co-op
06/2022 – 12/2022

Kuva Systems (Methane Detection Cameras) — Cambridge, MA

- Designed, prototype, and filed ECOs and supported product development for a camera that detected and quantified methane leaks to reduce emissions.
- Conducted RCA and developed IP65-rated seals while reducing labor costs and improving productivity by 70%, streamlining the assembly.
- Applied DFM principles and sourced injection-modeled parts, reducing manufacturing costs by 75% to make the cameras price more accessible.

Co-Founder & Former CEO
01/2022 – 01/2024

Juze Energy (Powerbank rental startup) — Monterrey, Mexico

- Directed teams across operations, marketing, and sales to successfully launch and grow a Powerbank rental network to more than 160 locations and 20k users.

SUMMARY

Lead mechanical engineer who took an autonomous drone-in-a-box system from concept to public launch. Background spans airframe design, systems integration, thermal, and DFM, with earlier large scale manufacturing work at Tesla.

EDUCATION

Northeastern University
Boston, MA

Graduation: May 2024

- GPA: 3.8 – Cum Laude
- Relevant Courses: Mechanical Design, System Analysis and Control, Thermal System Analysis & Design, Aeronautical Propulsion, Robotics Sensing and Navigation, Mechatronic Systems, Mechanical Computation FEA, Dynamics, Fluid Mechanics

Mentor, Drone/UAV Club

Guided a group of engineering students in the design and assembly of FPV drones, hosting workshops on aerodynamics, flight controllers, and safety protocols. Helped launch several successful drone projects for the university's aerial robotics team.

SKILLS

- Project Management
- Product Engineering
- CAD
  - SolidWorks
  - Fusion 360
  - Onshape
- Simulation and Analysis Software
  - CFD: Ansys & AirShaper
  - FEA: Abaqus & SolidWorks
  - MATLAB, Simulink
- Rapid Prototyping – FDM, MJF, SLS, SLA
- Mechanical Part Design – DFM, DFA, GD&T
- Manufacturing – Inj. Molding & Sheet metal
- Mechatronics/Embedded Systems
- Programming: Python, C/C++

Certifications & Awards

- Main Inventor on 2 Provisional Patents
- Lean Six-Sigma Black Belt
- SolidWorks CAD Design Professional – CSWP
- Best Capstone Project Award

LANGUAGES

English	Native	● ● ● ● ●
Spanish	Native	● ● ● ● ●