

Saad Benaicha

4th-year Mechanical Engineering student | UAV & Manufacturing Focus

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Project Portfolio

EDUCATION

INSA Lyon	Lyon, France	Aug 2015 – June 2027 (Expected)
<ul style="list-style-type: none">• M.S. in Mechanical Engineering, GPA: 3.95• Coursework: Finite Element Analysis (FEA) Hydraulics Heat Transfer Continuum Mechanics Mechanical Vibrations Fluid Mechanics Life Cycle Assessment (LCA) Materials & Forming Processes		
Lycée Lyaurey High School	Casablanca, Morocco	Sept 2019 – June 2022

PROFESSIONAL EXPERIENCE

Intern at Safran Aerosystems	Chateaudun, France	June 2025 – Aug 2025
<ul style="list-style-type: none">• Designed and implemented a 3D digital twin of the Châteaudun industrial site to support industrial re-layout and capacity planning.• Modeled 5,000+ elements into a detailed, structured site layout (CATIA V5) enabling interactive visualization and decision-making.• Authored a requirements specification for a robotic arm to automate loading/unloading of a test bench, supporting automation roadmap and CAPEX justification.		
Intern at Le Piston Français	Casablanca, Morocco	Jul 2023 – Aug 2023
<ul style="list-style-type: none">• Supported methods engineering and shopfloor operations for aerospace part manufacturing (turning, machining, fitting, inspection/quality control).• Assisted the commissioning of a 4-axis milling machine and contributed to workshop continuous improvement initiatives.• Increased cut-stop screw lifetime by 3× by identifying root cause linked to inadequate clamping tools and improving fastening practices.		

LEADERSHIP & PROJECTS

Associations

- **President of EUROAVIA Lyon:** Restructured the association and secured 7 industrial partnerships totaling €20,000.
- Founded the first French team to compete in the Air Cargo Challenge (international electric cargo aircraft competition).
- Led design and prototyping activities with a 40-person team: composites, mechanical and fluid simulations, manufacturing process planning.

Projects

- **Flightory Stallion UAV:** 3D-printed and assembled a 1.6 m wingspan UAV; upgraded the airframe with custom landing gear and tail boom, and integrated avionics for GPS navigation, real-time video, and autonomous missions under operational constraints (payload, endurance).
- **Portable 3-axis milling machine:** Designed, machined, and assembled the prototype; authored technical specifications and produced CAD models and manufacturing drawings within a 12-person team over a 6-month project.
- **Floating Building:** Buoyancy and stability simulation of a floating building. Design and assembly of a scaled-down prototype.
- **Bi-copter arm instrumentation & stabilization:** Modelling using MATLAB SIMULINK. Sensors + control integration using Arduino and Python.

Competitions

- **Ansys Ideathon:** 1st place in the Ansys Material Selection Ideathon; completed a material trade study for an aircraft cowl hinge and performed topology optimization to reduce weight.
- **First Lego League:** Led teams of 5–10 to build robots and prototype engineering projects; Morocco's National Champion (2018). Represented Morocco in international competitions in the USA, Lebanon, and Egypt.

SKILLS

Engineering & Simulation — Ansys Mechanical, ABAQUS, Granta Edu Pack

CAD & Design — SolidWorks, Catia V5, 3D Experience, Solid Edge

Manufacturing — 3D printing, Laser cutting, Water jet cutting, Carbon Fiber, Turning and Machining

Programming — Python, MATLAB, HTML, CSS, JavaScript

Languages — French (Native / C1) | English (C1, TOEIC 985/990) | Arabic (Native / C1) | German (A2)