

Emanuel Camacho

emanuel1902191@gmail.com | +351 960 366 633 | LinkedIn Profile | Personal website

SUMMARY

Aerospace engineering student specializing in propulsion systems and turbo-machinery design. Top graduate from highschool into Portugal's most competitive engineering track, with hands-on experience in UAS certification, turbojet engine development, and aerodynamic simulations. Combines strong technical expertise in CFD and CAD with a multidisciplinary understanding of aviation's broader context.

EXPERIENCE

Design Team Member – Compressor Section

January 2026 – Present

Aerotéc - BLUE

Lisbon, Portugal

- Leading the design and optimization of radial impeller and diffuser components for a student-developed small-scale turbojet engine within a 15-member interdisciplinary team.
- Developed MATLAB scripts implementing thermodynamics and aerodynamics equations to calculate blade geometry, flow paths, pressure ratios, and performance parameters for centrifugal compressor components.
- Created detailed 3D CAD models of radial impeller in SolidWorks and Siemens NX, integrating aerodynamic efficiency requirements with manufacturing constraints and structural integrity considerations.
- Conducted CFD simulations in Star-CCM+ to validate impeller performance, analyze flow separation, and optimize blade angles, achieving target pressure ratio within design specifications.
- Applied systems engineering principles to ensure compressor integration with combustion chamber and turbine sections, balancing overall engine performance goals.

Project Intern

August 2024 – September 2024

ANAC – Autoridade Nacional da Aviação Civil

Lisbon, Portugal

- Conducted comprehensive market analysis of European UAS landscape, identifying key trends and certification gaps for the national aviation authority.
- Developed aerodynamic failure prediction models for 8+ commercial UAS platforms, calculating ballistic trajectories and ground impact zones following critical system failures.
- Designed and implemented interactive HTML-based simulation tool with intuitive UI, enabling certification engineers to assess UAS safety parameters without requiring programming knowledge.
- Contributed foundational technical analysis supporting ANAC's UAS certification framework development, aligning with EASA regulatory standards.

EDUCATION

Master of Science – MSc, Aerospace Engineering

Expected 2026

Instituto Superior Técnico

Lisbon, Portugal

- Specialization in aircraft aerodynamics and propulsion systems.

Erasmus Semester – MSc, Aerospace Engineering

2025

Technical University of Munich

Munich, Germany

- Coursework focused on advanced propulsion technologies and aircraft systems integration.

Bachelor of Science, Aerospace Engineering

July 2024

Instituto Superior Técnico

Lisbon, Portugal

- Relevant coursework: Turbomachinery, Computational Fluid Dynamics, Flight Mechanics, Propulsion Systems.

High School Diploma, Sciences and Technologies (Engineering Track)

June 2021

Escola Secundária Francisco Franco

Funchal, Portugal

- Graduated top of engineering class with 19.13/20 GPA.

INVOLVEMENT

Board Member (Vogal)

December 2023 – Present

NESD-IST – Student Political Organization

Instituto Superior Técnico

- Managed digital communications strategy across social media platforms, increasing student engagement in political discourse by coordinating awareness campaigns.
- Conducted and published interview with Portuguese Assembly Deputy, demonstrating research, preparation, and professional communication skills.

SKILLS

Technical Skills: Star-CCM+ (CFD), MATLAB/Simulink, SolidWorks, Siemens NX, Solid Edge, Python, C, R, LaTeX, LTSpice, HTML/CSS (Front-End & Back-End Development), Microsoft Excel.

Engineering Competencies: Turbomachinery Design, Aerodynamics Analysis, Computational Fluid Dynamics, Systems Engineering, CAD Modeling, Technical Documentation, Project Management.

Languages: Portuguese (Native), English (C2), Spanish (C1), German (A2).