

ÁLVARO MORALES SÁNCHEZ

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EDUCATION

UNIVERSIDAD POLITÉCNICA DE MADRID – UPM

Bachelor's degree in Industrial Engineering – Mechanical Engineering 240 ECTS

Master's degree in Industrial Engineering – Mechanical Engineering 120 ECTS

TECHNISCHE UNIVERSITÄT MÜNCHEN – TUM

Erasmus Exchange Program – Mechanical Engineering [October 2024 – Present]

EXPERIENCE

TECHNISCHE UNIVERSITÄT MÜNCHEN – TUM

Student Assistant – Prototyping/Mechatronics Design [May 2025 – Present]

- Assist in designing, assembling, and testing mechatronic systems and prototypes. Support CAD modeling and 3D printing for prototyping. Integration and verification of PLCs.

UPM RACING – Spain's First Formula Student Team

Team Captain [September 2023 – August 2024]

- Led a team of 70-75 students from different degrees. Oversaw the design and manufacturing processes of the vehicle and the team's season.
- Managed the project's main goals, budget, sponsors and the resolution of the problems that often appear.

Member of the Aerodynamics – Cooling Team [September 2021 – August 2023]

- Designed, analysed and manufactured aerodynamic components using CFD and FEA/FEM tools and simulations.
- Optimized thermal management systems to minimize pressure losses and maximize efficiency.

NATIONAL INSTITUTE OF AEROSPACE TECHNOLOGY – INTA

Internship – Advanced Materials Area [November 2021 – December 2022]

- Conducted composite material testing for UPM Racing team's monocoque.
- Manufactured carbon fibre aerodynamic components and the monocoque chassis of the UPM Racing team.

SKILLS

- Engineering Tools:** Ansys/Fluent, Altair/Hypermesh, SimScale, Matlab/Simulink, Solid Edge, C Language, RStudio, LTSpice, ORSTAT, Autodesk (AutoCAD, Inventor, Fusion), Arduino, FluidSIM, SOPAS Engineering Tool, CNC Programming, ABB/RobotStudio, Visio, DassaultSystèmes/3DEXPERIENCE CATIA, RaceStudio, Python (Google Collab), Project, FlexSim, Processing (Java) and LaTeX.
- Languages:** English (C1), German/Deutsch (A2 – intensive in progress) and French/Français (B1).
- Charitable Work:** Hospital volunteer – July 2017 (*Hermanos San Juan de Dios*, Valladolid). Summer Camp – June 2017 and 2018 (*Parroquia San Alfonso María de Ligorio*, Madrid)
- Hobbies:** Automotive engineering, sports and its analysis, watches and their mechanism, music and its creativity and architecture with its history and sustainability.

PROJECTS AND ACHIEVEMENTS

- Bachelor's Thesis:** "Intelligent Design of Personalised Medical Devices: Exploring the Efficiency of the Superellipse and the Convex Hull." Grade: 9/10.
- Competitions:** Winners of UPM Racing "La Cantera 20/21" (Challenge involving the design and manufacture of a RC Car).
- Led the organisation** of UPM Racing "La Cantera 22/23".
- Awarded Scholarship** from Comunidad de Madrid for academic excellence. EvAU Grade: 13.489/14 (EvAU: Evaluation for Access to University, Spain).