Luis Enrique Sánchez

Aerospace Engineer

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Aerospace Engineer specialising in **mechanical design**, **aerodynamic optimisation**, and **system integration** for **aerospace vehicles**, with experience in prototype development for advanced **aerospace and high-performance applications**. Skilled in **CFD simulations**, **FEA**, and **CAD** modelling, with experience in **prototype development**, **test bench design**, and **energy and propulsion systems**. Advanced proficiency in **Siemens NX**, **STAR-CCM+**, and **OpenFOAM**, certified in **mechanical optimisation** and **structural simulation**.

Work experience

Mechanical design engineer

Zeleros Global - Valencia, Spain

February 2023 – Present

- Led the **mechanical design, optimisation, and system integration** of **high-density battery systems** (21 kWh and 50 kWh), ensuring **structural, thermal, and electrical performance**.
- Designed and implemented **electrical integration, harnessing, and routing strategies** under demanding packaging constraints.
- Developed a complete **aerodynamic wind test bench** for a Hyperloop scaled vehicle, covering **surface modelling**, **structural analysis, sensor integration**, and **precision manufacturing**.
- Delivered the full **design of an electric powertrain test bench**, managing **thermal management**, **assembly constraints**, and **mechanical interfaces**.
- Contributed to the **design and optimisation of magnetic propulsion tooling**, applying **Siemens NX** and **ANSYS Mechanical** to validate performance.
- Tools: **Siemens NX**, **ANSYS Mechanical**, **SpaceClaim**.

Aerodynamic R&D engineer

Horus UPV (Student Team) - Valencia, Spain

October 2022 – August 2024

- Led the **aerodynamic design and optimisation** of UAV external surfaces, focusing on **drag reduction, lift enhancement, and stability improvement**.
- Conducted **high-fidelity CFD simulations** including **RANS, MRF, transient and steady analyses**, with **mesh generation** using **SnappyHexMesh** and **STAR-CCM+ meshing tools**.
- Managed **aerodynamic data pipelines**, performing **post-processing,** and **validation** to support **design and performance testing.**
- Automated **wing fairing and winglet optimisation workflows** using **STAR-CCM+ adjoint solvers** and **MATLAB scripting**.
- Tools: **OpenFOAM**, **Siemens STAR-CCM+**, **ParaView**, **MATLAB**.

Mechanical design engineer

RTULe (Student Team) - León, Spain

September 2019 – June 2020

- Designed the **outer shell (mechanical surfacing)** of a Formula Student race car, using **Inventor** and **SolidWorks** for **surface modelling** and **structural analysis**.
- Collaborated with **mechanical analysis** and **aerodynamic teams** to **optimise the car's structure and aerodynamic performance**.

- Tools: **Inventor**, **SolidWorks**, **AutoCAD**, **HyperWorks**.

Skills

- **CAD & Mechanical Design**: Siemens NX (advanced), Ansys Mechanical, SpaceClaim, Inventor.
- **CFD & Simulation**: Siemens StarCCM+, OpenFOAM (2+ years), MATLAB.
- **Testing & Instrumentation**: sensor integration, data adquisition.
- **Programming & Automation**: Python (learning), Java (intermediate), scripting for data analysis and post-processing.
- **Other Tools**: HyperWorks, AutoCAD.
- **Soft Skills**: Problem-solving, adaptability, analytical mindset, teamwork, effective communication, proactive.

Education

- **MSc Aeronautical Engineering** – Polytechnic University of Valencia, Spain (2021–2023) Thesis: *Optimisation of external geometry to improve aerodynamic efficiency of UAVs*.
- **BSc Aeronautical Engineering** – University of León, Spain (2017–2021) Thesis: *Simulation and analysis of urban wind with application to UAV operations*.

Certification

- **Mechanical Optimisation** for Competition Cars and Fuels (40h) – Leon University.
- **3D Modelling** for Mechanical Design Using Inventor (15h) – Autodesk.
- Introduction to **Structural Simulation** using **Ansys Mechanical** (13h) – iESSS.

Languages

- **Spanish** – Native/Bilingual.
- **English** – Professional working proficiency (B2 Cambridge certified).
- **German** – Learning basic.

References

- **Ernesto** – Mechanical Design Unit Leader.
- **Germán** – Powertrain Project Leader.