Ulises Fernandez

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https://www.linkedin.com/in/ulisesfm/ | https://github.com/ulisesfm-py | Driving license

Education

Artificial Intelligence Professional Program

Stanford University

Sept 2023 – Present | Online

Professional Certificate: Program completion
XCS236: Deep Generative Models
XCS224N: NLP with Deep Learning
XCS229: Machine Learning

MSc in Aerospace Vehicle Design

Cranfield University

Oct 2017 – Sept 2018 | Cranfield, United Kingdom

Group Design Project: Advanced technology low drag airliner A-17 – aft fuselage design
Individual Research Project: Biomimetic analysis of a pterosaur wing and its UAV applications.

MSc in Aerospace Engineering

Polytechnic University of Catalonia

Sept 2016 – July 2017 | Barcelona, Spain

Group Design Project: Smartlink - Smart city planning using Copernicus sentinels.

BSc in Aerospace Vehicle Engineering

Polytechnic University of Catalonia

Sept 2011 – July 2016 | Barcelona, Spain

Group Design Project: Design and marketing planning of a home-built light aircraft.
Individual Research Project: Prototyping and fabrication study of a stowable rigid sail.

Work Experience

Structural Analyst

Bound4blue

Oct 2018 – May 2023 | Barcelona, Spain

In this company we have developed autonomous rigid sails aimed to be used as fuel reduction systems in large vessels. We have designed and fabricated a wide range of rigid sails and we are currently integrating our first serial-manufactured units.

- 3D CAD Modeling using Solidworks and NX Siemens: Modeling of mechanisms, Solid and Surface modeling, Parametric based design, Detail Drawing and Documentation.
- Spearheaded the development of autonomous rigid sails for large vessels, resulting in significant fuel savings.
- Played a pivotal role in the conceptual, preliminary, and detailed design of mechanical components, ensuring peak performance.
- Conducted comprehensive mechanical loading analyses using FEA tools.
- Analysed data from winds and waves acquired from Copernicus Satellites and other sources to optimize routes and estimate loading scenarios.
- Supervised on-site manufacturing, ensuring quality and resolving production issues.

Summary

Aerospace Engineer with 7 years of expertise in **structural design** and analysis of aerodynamic loads. Extensive experience in the maritime and energy industry, specifically in the new field of wind-assisted propulsion systems. Proficient in CAD modeling, analytical calculations, finite element analysis, and managing on-site fabrication. Strong foundation in **Python programming** for data analysis and automation in engineering applications. Currently focusing on **Machine Learning and AI**, aiming to add new tools to my design expertise. Eager to apply these cutting-edge skills in AI and machine learning to aerospace or structural analysis projects. Adept at working cross-functionally to drive innovation and efficiency in engineering solutions. Proficient in English, Spanish, and Catalan.

Skills

Problem solving | Excellent communicator | Rational thinking | Highly analytical | Innovative | Teamwork | Design experience | Global design vision

Software

ANSYS Mechanical ●●●●●
Solidworks ●●●●●
CATIA V5/V6 ●●●●○
Simcenter Siemens ●●●○○
Django Framework ●●●○○
ANSYS Fluent ●●●●○
Python ●●●●●
SQL ●●●●○
ML Algorithms ●●●●○
Git ●●●●○

Languages

English ●●●●●
Spanish ●●●●●
Catalan ●●●●●
French ●●○○○

Certificates & Courses

Complete Python Developer

Zero to Mastery

Aug 2023 | Online

Machine Learning and Data Science

Zero to Mastery

July 2024 | Online

Django Backend Framework Certificate

Code With Mosh

Jan 2023 | Online

Work Experience

Mechanical design engineer

Bound4blue

Feb 2015 – Nov 2016 Barcelona, Spain

In Bound4Blue we conceptualized, designed, and fabricated the first prototypes of the rigid sail and integrated them into multiple medium-sized vessels.

- Carried out creative designs from scratch of mechanisms and the main structure of prototypes.
- Generated a **complete CAD model of the prototype in CATIA V5**.
- Managed the order of materials and components, conducting cost analysis.
- Analyzed errors and identified improvements, working with a multidisciplinary team.
- Organized the assembly procedures creating and handling drawings to the workshop.
- Actively participated in the prototype's construction following the fabrication on-site.

Certificates & Courses

A Hands-on Introduction to Engineering Simulation (ANSYS)

36 hour course

Nov 2018 CornellX

IELTS

Score : 8.0/9.0

Aug 2017

CATIA V5

45 hour course

July 2015 UPC, Barcelona

Patents

PATENT

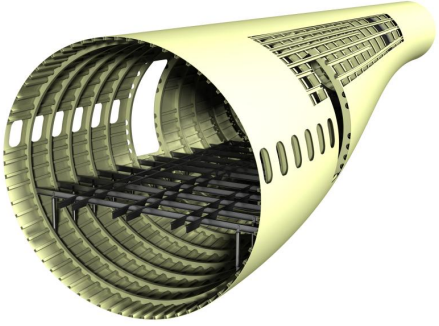
Sail with aerodynamic profile and permutable leading and trailing edge: es WO2017186991A1

Apr 2016

Projects

Esail 1-17: Amasus
Bound4Blue, 2023
Spearheading the innovation in maritime sail technology, the Amasus project presents the integration of two state-of-the-art 17-meter-tall rigid sails, enhanced by aspiration of the boundary layer. In my pivotal role, I was entrusted with the intricate task of designing the primary structure and the flap mechanisms. Additionally, I played a crucial part in defining the loads, ensuring both stability and efficiency in the project's execution.

Esail 1-21: Naumon
Bound4Blue, 2021
Taking maritime sail engineering to new heights, the Naumon project entailed the design and development of a majestic 21-meter-tall high-tech rigid sail. Serving in a central capacity, I oversaw the conception of the primary structure, the tilting mechanism, and the intricate flap mechanism. Beyond the design phase, I supervised the fabrication and integration stages, ensuring that the sail met the desired standards. My responsibilities also extended to estimating the complex loading scenarios, encompassing both aerodynamic and inertial forces.



A-17 Zephyr
Cranfield University, 2018
The A-17 Zephyr was an ambitious academic endeavor aimed at redesigning the future of airliners with advanced low-drag technology. This monumental project involved collaboration among 90+ students and was diligently supervised by seasoned engineers from Airbus and Rolls-Royce. I was entrusted with the vital responsibility of designing the aft fuselage. Additionally, I undertook the symmetrical loads computation, ensuring that the airliner would withstand ultimate loads without compromising safety.

Interests

Aerospace | Programming | Data Science | Hiking | Guitar