Hugo Filipe Lopes Costa

Work permit: Portuguese, British, Icelandic   **Date of birth:** 29/04/2000   **Nationality:** Portuguese

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ABOUT ME

MSc student in Offshore Renewable Energy with a BEng in Mechanical Engineering, combining practical experience in mechanical and electrical maintenance, automation systems, technical documentation, and operational planning. This builds on a decade-long technical journey through roles in hydraulics, industrial automation, and manufacturing. Alongside this, I've gained international exposure through a sustainability-focused programme in Malaysia and hands-on work at a fish farm in Iceland—experiences that strengthened my global perspective, resilience, and adaptability. I contributed to engineering development and market analysis of UAV safety systems in 2022–2023, enhancing my skills in component management and regulatory compliance. My background in predictive and corrective maintenance, quality control, and continuous improvement (KAIZEN) equips me with analytical and problem-solving skills suited for offshore asset management. I am now looking to contribute to roles in offshore operations, OPEX, asset integrity, or project support within oil & gas or energy transition projects.

EDUCATION AND TRAINING

MSC IN OFFSHORE RENEWABLE ENERGY - UNIVERSITY OF PLYMOUTH | UNITED KINGDOM | 09/2024 - 09/2025 (CURRENT)

• Modelled and analysed wave energy converters in a wave tank, using advanced spreadsheet methods to handle missing data, calculate power output, and estimate annual energy production across multiple sea states and orifice geometries.
• Simulated floating offshore wind platform and mooring dynamics using OrcaFlex to assess motion and system response.
• Developed a machine learning model to detect illegal ship-to-ship oil transfers using satellite imagery.
• Deployed aerial and surface drones offshore and planned survey missions in a simulated control room; gained Civil Aviation Authority registration and explored autonomous inspection systems with onboard AI to support offshore wind maintenance operations.
• Analysed UK and global offshore wind allocation models, focusing on financial viability, market design flaws, CAPEX pressures and policy misalignment; analysed how inflation, supply chain, and investment risks impact developer confidence and project delivery.
• Evaluated the feasibility of a floating wind farm off the coast of Fiji, integrating site layout design, supply chain planning, permitting constraints, and environmental considerations; developed cross-disciplinary project planning and strategic assessment skills.
• Developed strong networking and influencing skills by presenting technical recommendations and shaping group project strategies using PowerPoint and collaborative tools.

Website https://www.plymouth.ac.uk/ | **Level in EQF** EQF level 7 | **Thesis** Hybrid Wind-Wave Floating Platform for Fiji

BENG IN MECHANICAL ENGINEERING - COVENTRY UNIVERSITY | UNITED KINGDOM | 09/2020 - 08/2024

• Assessed wind energy potential and turbine performance in Egypt using QBlade; supported aerodynamic analysis, site assessment, and project coordination in a multidisciplinary team.
• Performed CFD simulations on counterflow heat exchangers using Ansys Fluent; validated results against experimental data for thermal efficiency using Excel.
• Developed an off-grid renewable Combined Heat and Power system for an Indian hotel using solar, wind, and storage; conducted techno-economic analysis with HOMER Pro.
• Conducted materials selection and manufacturing evaluations using Granta EduPack; applied fracture mechanics for component reliability.
• Performed Finite Element Analysis on truss structures using Abaqus to predict stress, displacement, and structural integrity.
• Completed Bloomberg Market Concepts training; conducted stock market simulations and analysed economic impacts on tech-sector investments.
• Executed full-field strain analysis on fatigue samples using Digital Image Correlation, strengthening experimental mechanics and data interpretation skills.

Website https://www.coventry.ac.uk/ | **Final grade** 2:1 | **Level in EQF** EQF level 6

TECHNOLOGICAL SPECIALISATION COURSE IN AUTOMATION, ROBOTICS AND INDUSTRIAL CONTROL - ATEC TRAINING ACADEMY | PORTO, PORTUGAL | 10/2018 – 02/2020

• Gained strong command of Siemens programmable logic controllers, process control, industrial instrumentation, and Human Machine Interface systems.
• Programmed and simulated ABB industrial robots using RobotStudio, executing automated cell operations aligned with smart manufacturing standards.
• Modelled and implemented integrated automation circuits for production environments, preparing for high-efficiency, safety-compliant deployment.
• Gained field insight into industrial O&M practices through site visits to high-speed rail and cork production facilities.
• Achieved international AHK certification, validating advanced expertise in industrial automation, robotics, industrial control, and labour law under European-German vocational standards.

Website https://www.atec.pt/   **Level in EQF** EQF level 5

WORK EXPERIENCE

CEIIA - PORTO, PORTUGAL | 09/2022 - 02/2023

ADVANCED AIR MOBILITY ENGINEERING INTERN

• Contributed to the development of emergency UAV systems (parachute recovery & flight termination).
• Carried out Intellectual Property and patent research to assess state-of-the-art technologies and ensure legal compliance
• Supported engineering documentation and component tracking using structures Excel databases
• Performed market analysis for UAS innovations within medical logistics; contributed to internal discussions influencing project direction

CEIIA - PORTO, PORTUGAL | 06/2020 - 08/2020

MEDICAL DEVICE ENGINEERING TECHNICIAN

• Contributed to the assembly, testing, and final troubleshooting of ATENA emergency ventilators during the COVID-19 response.
• Conducted quality control on electrical and pneumatic components and supported production planning using KAIZEN principles.

MAKE INDUSTRY - PORTO, PORTUGAL | 09/2019 - 02/2020

AUTOMATION ENGINEERING TECHNICIAN INTERN

• Programmed and configured Rockwell-based industrial control systems with Festo pneumatics, contributing to automation and process optimisation.
• Collaborated with clients to improve thermal control systems, influencing design decisions through technical insight and on-site testing feedback.
• Managed component inventory and maintained technical documentation to support system reliability and traceability.

HCEN - PORTO, PORTUGAL | 09/2017 - 12/2017

FLUID POWER TECHNICIAN INTERN

• Performed predictive and corrective O&M on hydraulic systems, including Rexroth, Parker, and Festo components.
• Serviced hydraulic systems from critical assets such as container cranes used at Porto de Leixões, where minimising downtime was essential.
• Contributed to reverse engineering and retrofitting of legacy systems, improving reliability and extending equipment life cycles.

SUMMER JOBS

Fish farm worker (Iceland), warehouse operative, bartender, and restaurant waiter (UK). Built resilience, adaptability, and teamwork while balancing studies with seasonal work.

LANGUAGE SKILLS

Mother tongue(s): **Portuguese**   Other language(s): **English - C1** | **Spanish - B1**

SKILLS

Data Analysis: Excel, GIS, Matlab, R, Satellite Analysis

Design and Simulation: Ansys, CATIA, OrcaFlex, Siemens TIA Portal

Business & Financial Insights: Bloomberg Terminal, Microsoft Office, Techno-economic analysis

PROJECTS

CURRENT

Hybrid Wind-Wave Floating Platform for Fiji (MSc Dissertation)

• Contributing to the development and experimental testing of three cylindrical chamber geometries for an Oscillating Water Column system integrated into the Volturn-US floating wind platform.
• Investigating how varying air-to-water chamber length ratios influence energy capture under different wave conditions.
• Led physical lab testing; performance data will be processed and analysed using Excel and MATLAB to assess and compare design efficiency.

SDG Mobility Programme – Net Zero Malaysia | Universiti Malaya | 06/2024

• Participated in a one-month international programme focused on the energy transition and Sustainable Development Goals.
• Engaged in interdisciplinary seminars, workshops, and field visits alongside academics, government bodies, NGOs, and industry stakeholders.
• Contributed to the exchange of sustainability strategies between UK/EU and Malaysian contexts, enhancing cross-cultural understanding, stakeholder engagement and communication skills.