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About me

Experienced mechanical engineer with 9+ years in applied energy research. Seeking opportunities to apply interdisciplinary expertise to drive sustainable business development. Passionate about delivering innovative solutions to challenging engineering problems.

Skills

• Problem solving • Data analysis • Experimental and numerical analysis • Cost-benefit analysis • DOE • Design Optimization • Data synthesis & communication • Project management • Teamwork • Cross-cultural awareness • Knowledge in IEC.60193 • Ability to write at different levels: brief abstracts to book-length manuscripts

• CAD: CatiaV5, Solid Edge, Solid Works
• Data Management: Office, LaTeX, MATLAB, Python
• Simulation Software: ANSYS Fluent and Workbench, NUMECA Open/Turbo
• CFD tools: SpaceClaim, ICEM, CFD-Post, Autogrid5, CFView

Languages

Invited Chairman and speaker at international conferences and seminars.

Italian	Native speaker
English	Highly proficient
French	Conversational proficient
Spanish	Basic speaking
German	Basic knowledge

Alessandro MORABITO

Research And Development Manager

Experience

Since 2021 **Research Associate & Project Manager** EPFL, Switzerland

• Lead complex 3D CAD design and Computational Fluid Dynamics (CFD) analyses to simulate and understand intricate water-flow conditions and system performances.
• Develop analytical and numerical models to support the feasibility analysis for hydropower plant operations with cross-functional engineering teams. Perform the monitoring of the operational parameters, constraints and risk identification.
• Partnered with machine learning team for the components fatigue prediction in hydropower generation.
• Develop and lead research portfolios, demonstrating proficiency in strategic planning and execution for experimental and numerical investigations.
• Redact reports, write scientific papers, and experience in applying for funding.

2014 - 2021 **R&D Engineer** ATM-ULB, Belgium

• Engaged in the analysis and thermodynamics modelling of Compressed air energy storage (CAES) systems and thermal storage – (CAES-CET prj)
• Designed and delivered a first-of-its-kind micro-pumped hydro energy storage installation integrated into a SmartGrid – (Smart-Water prj)
• Conduced thermo-fluid-dynamic analysis into a light helicopter air-intake supported by numerical 3D analysis – (ESPOSA prj)
• Managed technical-economic calculations to define the required investments for prosumers and examine new business cases to support the energy transition: the Belgian case – (EPOC 2030-2050 prj)

2016 **Design Engineer Intern** Ensival-Moret, Belgium

Developed a numerical model specifically designed to assist in the well-informed selection of commercial centrifugal pumps for use in generating mode. This model incorporates both economic and technical considerations.

Education

2017 - 2021 **Ph.D. in Engineering Sciences and Technology** Université libre de Bruxelles, Belgium

• Research goals focused on alternative hydropower technologies.
• Organized and planned experimental and numerical tests.
Thesis titled *Experimental and numerical analysis of a Pump as Turbine in micro Pumped Hydro Energy Storage*.
• Teaching assistant of M.Sc. courses of *Turbomachinery* and *Aircraft propulsion and gas turbine engine*. Developed the ability to synthesize and communicate large amounts of complex information. Supervised and guided master students in their thesis work.

2018 - 2020 **M.Sc. in Science of Management** Vrije Universiteit Brussel, Belgium

Developed a broad overview of all aspects of modern business management: financial and managerial accounting, supply chain, HR, business and corporate strategy, strategic marketing, corporate finance and investments.
Thesis titled *Business Model For Energy Management Enterprises*

2011 - 2014 **M.Sc. in Energy Engineering** Politecnico di Milano, Italy

Specializing in power generation and thermofluid dynamics

Additional Training

• Sustainability and Corporate ESG | Practical Implementation, Prof. Eng. M.Oliveira, UFPR, Online
• Multi-objective optimization problems and algorithms, Udemy, Online
• Centrifugal and Axial Pumps Design, Performance and Problem Solving, NREC-concept, Germany
• Deepening in renewable energy technologies, ULPGC, Spain

Publications

Authorship and co-authorship in 10+ international journal and conference papers. A detailed list is provided at GScholar or in.