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Mechatronics • Battery Energy Systems • Digital Twins • Advanced Control



Doctoral Researcher at the University of Vaasa with expertise in battery energy systems, electrothermal and degradation modeling, digital twin technologies, hydrogen energy systems, and advanced control strategies. My research focuses on Li-ion battery modeling, battery lifetime extension, efficient powertrain solutions, physics-based P2D/DFN battery models, electrolyzer modeling and performance optimization, and the development of digital twins for Wärtsilä engines to support advanced diagnostics, control, and system optimization.

I hold an M.Sc. in Mechatronics Engineering from the University of Rome Tor Vergata and a B.Sc. in Mechanical Engineering from Shiraz University. where my work focuses on battery systems, hybridization, battery modelling, aging, and advanced energy-management methods.

Before my current position, I worked as an Erasmus+ Researcher at VEBIC, contributing to communication development and Hardware-in-the-Loop testing for a Wärtsilä marine engine. My previous experience also includes teaching English and Computer Science in Rome and engineering roles involving CAD design, CNC manufacturing, 3D printing, simulation, and industrial equipment selection. My multidisciplinary background combines mechatronics, energy systems, embedded control, and practical engineering experience.