



Elio Galeotti

ID: CA50670BW | **Work permit:** Italian | **Date of birth:** 24/07/1999 |

Place of birth: GAETA, Italy | **Nationality:** Italian | **Gender:** Male | **Phone number:**

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Address: SR 630 Formia-Cassino, 04023, Formia, Italy (Home)

WORK EXPERIENCE

PH.D. STUDENT – UNIVERSITY OF SANNIO / CIRA – 15/12/2025 – Current – BENEVENTO, ITALY

- Hybrid-Electric Power Systems (Li-ion batteries, inverter, motors, Fuel Cell)
- Research and Modeling the eVTOL (electric Vertical Take-Off and Landing) aircraft
- Hybrid-electric power turbine for regional aviation

RESEARCH FELLOW – UNIVERSITY OF NAPLES FEDERICO II – 19/05/2025 – 19/11/2025 – NAPOLI, ITALY

- Fluid Power Research
- Modeling and Simulation
- Experimental Validation
- Studying propulsion system

INTERSHIP – GUANGDONG TECHNION ISRAEL INSTITUTE OF TECHNOLOGY – 15/10/2024 – 15/01/2025 – SHANTOU, CHINA

Address: 241 Daxue Road, Jinping District, Shantou, Guangdong Province, China, 515063, Shantou, China

I had the opportunity to spend three months abroad, engaging in collaborative research with an international team. During this experience, I developed a strong passion for research and learned to use various new software tools.

EDUCATION AND TRAINING

01/03/2023 – 04/04/2025 Napoli, Italy

MASTER'S DEGREE IN MECHANICAL ENGINEERING FOR ENERGY AND ENVIRONMENT University of Naples Federico II

My thesis project was conducted in China, at the Guangdong Technion Israel Institute of Technology. The topic was the development of a Digital Twin of an 8-ton hydraulic excavator. The model was built using Simcenter Amesim and successfully validated through experimental testing.

Website <https://www.unina.it/it/> | **Field of study** Motor vehicles, ships and aircraft | **Final grade** 110/110 cum laude |

Thesis Analysis, Modeling, and Simulation of Excavator's Hydraulic Circuit

12/09/2018 – 25/01/2023 Napoli, Italy

BACHELOR'S DEGREE IN MECHANICAL ENGINEERING University of Naples Federico II

The thesis focuses on axial flux permanent magnet electric machines. It includes a study of the machine's evolution, topological structures, sizing equations, and methods for modeling and performance analysis, culminating in a comparison with radial flux machines.

Field of study Engineering, manufacturing and construction | **Final grade** 96/110 |

Thesis Design and Performance Evaluation of Axial Flux Permanent Magnet Machines

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

MATLAB and Simulink, math problems and systems | Simcenter Amesim (Siemens) | 2D and 3D design software (Solidworks, AutoCad) | 3D design (Solidworks, Inventor) | GT Power / GT suite | Simulatori circuitali Psim e Pspice | MS Office (Word, Excel, Outlook, Powerpoint, OneNote,) | Ansys (Fluent, Structural) | Battery Modeling | Comsol Multiphysics | eVTOL Modeling

PUBLICATIONS

2025
[Analysis, Modeling, and Testing the Control Valves of an 8-Ton Excavator](#)

Abstract. Power transmission in off-road machinery has traditionally relied on fluid power systems, where an internal combustion engine drives hydraulic pumps. This research, a collaboration between the Guangdong Technion–Israel Institute of Technology (GTIIT) in China, the University of Naples Federico II, and the University of Sannio in Italy, focuses on the development of the hydraulic circuit of an 8-ton excavator housed in the GTIIT’s Fluid-Powered Robotics Laboratory. The excavator is powered by a 3.17-liter diesel internal combustion engine and relies on a load-sensing system. The objective of this study is to develop a high-fidelity numerical model of the excavator’s hydraulic control valves. The model was created using a lumped parameter approach and validated through experimental testing on the actual machine performed at GTIIT. The ultimate goal of this work is to establish the foundation for a complete model of the excavator's hydraulic system to modify the power supply type to alternative fuels and, consequently, adapt the hydraulic actuation system. This paper, based on experimental data, has successfully validated a critical part of the entire excavator model.

E Galeotti D Padovani E Frosina A Senatore, 2025, Analysis, Modeling, and Testing the Control Valves of an 8-Ton Excavator, Journal of Physics

Authors: Elio Galeotti, Damiano Padovani, Emma Frosina, Adolfo Senatore | **Journal Name:** Journal of Physics

2026
Preliminary Energy Management Assessment of a Series Hybrid-Electric Tilt-Rotor eVTOL for AAM Missions (Under publication)

E Galeotti G Marinaro E Frosina, 2026, Preliminary Energy Management Assessment of a Series Hybrid-Electric Tilt-Rotor eVTOL for AAM Missions, Journal of Physics

Authors: Elio Galeotti, Gianluca Marinaro, Emma Frosina | **Journal Name:** Journal of Physics

CONFERENCES AND SEMINARS

10/09/2025 – 12/09/2025 Benevento
National ATI Congress 2025

Oral presentation of a research article: Analysis, Modeling, and Testing the Control Valves of an 8-Ton Excavator

09/09/2026 – 11/09/2026 Milan
National ATI Congress 2026

Oral presentation of a research article: Preliminary Energy Management Assessment of a Series Hybrid-Electric Tilt-Rotor eVTOL for AAM Missions

30/09/2026 – 01/10/2026 Naples
Workshop HYDROGEN PROPULSION: A Vision for the future of Aviation

Focus:

- H2 FC A/C - CS25 CLASS, H2C
- H2 FC A/C - CS23 CLASS, STORAGE & HEAT, CERTIFICATION, INFRASTRUCTURE

● **CERTIFICATIONS**

Ordine degli Ingegneri di Napoli, 08/03/2026

Italian professional engineering license (Naples Order of Engineers)

Write here the description