

GIULIO BARLETTA

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<https://scholar.google.com/citations?user=CaIXqogAAAAJ&hl=it>

SUMMARY

I am a dedicated and dynamic Energy and Mechanical Engineering graduate pursuing a Ph.D. in Energetics, with interest in Renewable Energy Systems and a strong motivation to develop sustainable technologies and networks. Creative, results-oriented, reliable and with a strong sense of leadership and cooperation, I offer comprehensive knowledge of current research topics and trends in the field of renewable energy and sustainable development.

EDUCATION

Politecnico di Torino – Turin, Italy <i>Ph.D. in Energetics</i>	Nov. 2023 – Present
University of Illinois Chicago – Chicago, IL <i>Master of Science in Mechanical Engineering</i>	Aug. 2022 – Aug. 2023 GPA: 4.0/4.0
Politecnico di Torino – Turin, Italy <i>Master of Science in Energy Engineering</i>	Sept. 2021 – July 2023 Final grade: 110/110 cum laude
Politecnico di Torino – Turin, Italy <i>Bachelor of Science in Energy Engineering</i>	Oct. 2018 – July 2021 Final grade: 110/110 cum laude

TECHNICAL SKILLS

Hardware: Solar Photovoltaic Systems, Solar Thermal Systems, Energy Storage Systems, Electric Motors, Transformers, Internal Combustion Engines, Exergy and Exergo-Economic Analysis, Artificial Intelligence.
Software: MATLAB, Simulink, Aspen+, COMSOL, Polysun, Python, C, Microsoft Office.

LABORATORY WORK

MNFTL, Mechanical and Industrial Engineering Dept., UIC <i>Researcher</i>	Oct. 2022 – May 2023
<ul style="list-style-type: none">Conducted experiments on Atmospheric Water Harvesting using an innovative device in controlled working and environmental conditions.Applied Machine Learning techniques to predict the performance of the device under a vast range of operating conditions.	

INTERNSHIP EXPERIENCE

Energy Center Lab, Politecnico di Torino <i>Researcher</i>	Mar. 2021 – June 2021
<ul style="list-style-type: none">Conducted experiments on Lithium-Ion Batteries charge and discharge cycles at fixed temperature values.	

- Created a Simulink model to characterise the LIBs using the second order Thévenin equivalent circuit.
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PUBLICATIONS

Barletta, G.; DiPrima, P.; Papurello, D. Thévenin's Battery Model Parameter Estimation Based on Simulink. *Energies* **2022**, *15*, 6207. <https://doi.org/10.3390/en15176207>

Barletta, G.; Trezza, G.; Chiavazzo, E. Learning *Effective Good* Variables from Physical Data. *Mach. Learn. Knowl. Extr.* **2024**, *6*, 1597-1618. <https://doi.org/10.3390/make6030077>

De Angelis, P.; Trezza, G.; Barletta, G.; Asinari, P.; Chiavazzo, E. "Energy-GNoME: A Living Database of Selected Materials for Energy Applications." arXiv, November 15, **2024**. DOI: 10.48550/arXiv.2411.10125.

PROJECTS

- Exergy and exergo-economic analysis of a compressed air energy storage plant using Aspen+ and Microsoft Excel.
 - Optimal design of a PCM storage unit using Comsol Multiphysics.
 - Optimal design of a thermal energy storage using liquid water for domestic hot water production using MATLAB & Simulink.
 - Low-temperature solar thermal system design using Polysun.
 - Simulation of a DC motor application in a flywheel energy storage system using MATLAB & Simulink.
 - Machine Learning Prediction of the Performance of Membrane Based Atmospheric Water Harvesting using Python.
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SPOKEN LANGUAGES

- Italian – Native speaker
 - English – Full professional proficiency
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ACHIEVEMENTS

- Awarded the *Giovani Talenti* scholarship from Politecnico di Torino engineering college.
 - Ranked 1st among other Mechanical Engineering students in the TOP-UIC joint program.
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EXTRA-CURRICULAR ACTIVITIES

Caritas Italiana - Frosinone, Italy
Volunteer for collection of food donations

Sept. 2014 – July 2018