GIULIO BARLETTA

Via dei Notari, 33, Supino, Italy, 03019 | giuliobarletta.ing@gmail.com | +39 349 462 6225
https://giuliobarl.github.io/
https://www.linkedin.com/in/giulio-barletta-energy-engineer/
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 artificial intelligence, renewable energy and sustainable development.

EDUCATION

Politecnico di Torino – Turin, Italy — Nov. 2023 – Present
Ph.D. in Energetics

University of Illinois Chicago – Chicago, IL — Aug. 2022 – Aug. 2023
Master of Science in Mechanical Engineering — GPA: 4.0/4.0

Politecnico di Torino – Turin, Italy — Sept. 2021 – July 2023
Master of Science in Energy Engineering — Final grade: 110/110 cum laude

Politecnico di Torino – Turin, Italy — Oct. 2018 – July 2021
Bachelor of Science in Energy Engineering — 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: Python, MATLAB, Simulink, Microsoft Office.

LABORATORY WORK

MNFTL, Mechanical and Industrial Engineering Dept., UIC — Oct. 2022 – May 2023
Researcher

- 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 — Mar. 2021 – June 2021
Researcher

- 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.

PUBLICATIONS

Barletta, G.; Moitra, S.; Derrible, S. ; Mathew, A. ; Nair, A. M. ; Megaridis, C. M. Exploring machine learning models to predict atmospheric water harvesting with an ion deposition membrane. *J. Water Process Eng.*, **2025**, https://doi.org/10.1016/j.jwpe.2025.107476

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

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

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

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/scikit-learn.

SPOKEN LANGUAGES

- Italian – Native speaker
- English – Full professional proficiency

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.

EXTRA-CURRICULAR ACTIVITIES

Caritas Italiana - Frosinone, Italy Sept. 2014 – July 2018
Volunteer for collection of food donations