

Luca Mondonico

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EDUCATION

Stanford University

Ph.D. candidate in Materials Science and Engineering; Minor in Computer Science

Stanford, CA, US

Sep. 2023 – Present

- Co-advised by Prof. Yi Cui and Prof. Zhenan Bao.
- **2026 Stanford HAI Data Science Scholar**
- **2026 Clear Ventures Fellowship**
- **2024 Chevron Fellowship in Energy**

ETH Zürich

MSc in Materials Science, with distinction

Zürich, CH

Sep. 2019 – July 2023

- MSP Scholarship recipient (granted a \$13,000 yearly stipend, 50 scholarships for ~5,000 students).
- D-MATL Departmental Fellowship (granted a \$2,000 quarterly stipend, 1 fellowship for ~60 students).

Politecnico di Milano

BSc in Materials and Nanotechnology Engineering | 110/110 cum laude

Milan, IT

July 2016 – July 2019

SELECTED PUBLICATIONS

- **Mondonico, Luca**, et al. "Hierarchical Moiety-Aware Graph Transformer for Li-metal Electrolyte Formulation Design", *Nature Energy* (under revision); *ChemRxiv preprint*, 2025

EXPERIENCE

Tesla, Inc.

Cell Engineer Intern

Palo Alto, CA, US

Mar. 2023 – July 2023

- Built internal Python tools, adopted by 50+ engineers, cutting cell qualification test planning/validation time by 90%.
- Led 3 internal cell qualification programs, coordinating 100+ testing protocols across multiple labs and external vendors.

Materials Engineer Intern

Feb. 2022 – Dec. 2022

- Developed and tested potting materials for battery packs of Model 3, Y, Cybertruck, and Semi. The prototype materials led to a 3kg mass reduction per car, and \$5.2 million saved in materials procurement per quarter.
- Saved up to 500 hours of active test monitoring by designing accelerated testing protocols to evaluate battery materials mechanical compliance in temperature-sensitive scenarios (thermal runaway, supercharging).

Stanford University

Research Scholar | Zhenan Bao Group at Stanford ChemE

Stanford, CA, US

July 2021 – Feb. 2022

- Pioneered a solution-processable artificial solid electrolyte interphase for effective anode protection in Li-metal batteries.
- Collaborated on designing and synthesizing fluorinated electrolyte solvents for improved cyclability in Li-ion batteries.

ETH Zürich

Research Fellow & Teaching Assistant

Zürich, CH

Sep. 2019 – June 2021

- Pioneered nanostructured carbon-gold composite battery electrodes for applications in wearable electronic devices. The transparent battery can be stretched up to 50% without losing electrochemical stability over 120 cycles.
- Taught ~25 students, one-on-one, in a graduate-level course on transport phenomena (PDE-based physical modeling).

Nanyang Technological University

Research Intern

Singapore, SG

July 2018 – Sep. 2018

- Led 3 international researchers in modeling CO adsorption on miniature gas detectors, increasing sensitivity by 30%.

EXPO 2017

Student Representative at the Italian Pavilion

Astana, KZ

June 2017 – Aug. 2017

- Presented a weekly conference program on sustainable energy technologies to 20 local organizers.

SKILLS

ML/AI: PyTorch (PyTorch Geometric, Hugging Face), Graph transformers & geometric deep learning, Multimodal foundation models, Molecular representation learning, Generative molecular design, RDKit.

Engineering: Python, SQL, Distributed multi-GPU training (DDP, Slurm) on NVIDIA H100/B200 clusters.

Languages: Italian (Native), English (Proficient).

INTERESTS

Volleyball | Professional player & Team Captain | 2× Italian National Champion.

2013 – 2017