

# LUCA MALAGUTTI

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## Education

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### ETH Zurich

*MSc in Computer Science*

**Sep. 2020 – Aug. 2023**

*Zurich, Switzerland*

- Overall grade: 5.41/6.0
- Selected courses: Natural Language Processing, Advanced Machine Learning, Machine Perception, Big Data.

### Politecnico di Milano

*BSc Computer Engineering*

**Sep. 2017 – Jul. 2020**

*Milan, Italy*

- Final grade: 110/110
- Selected courses: Probability and Statistics, Linear Algebra, Algorithms and Principles of Computer Science.

## Work Experience

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### ETH Zurich

*Research Assistant*

**Aug. 2023 – present**

*Zurich, Switzerland*

- Research assistant under the supervision of Prof. Ryan Cotterell.
- Research focus on Natural Language Generation.

### SEI Novus

*Data Science Intern*

**Mar. 2022 – Sep. 2022**

*Zurich, Switzerland*

- Built from scratch a complete pipeline for automatic data extraction from financial documents.
- Handled data processing and final deployment on AWS cloud, leveraged SOTA Transformer-based models.

## Teaching Experience

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### Natural Language Processing

*Teaching Assistant*

**2021, 2022, and 2023**

*ETH Zurich*

- Instructor: Prof. Ryan Cotterell
- Wrote lecture notes, held lectures and tutorials, prepared and marked assignments and exam questions over three editions of the course.

### Large Language Models

*Teaching Assistant*

**2023**

*ETH Zurich*

- Instructors: Prof. Ryan Cotterell, Prof. Mrinmaya Sachan, Prof. Florian Tramèr, and Prof. Ce Zhang
- Prepared and marked assignments and exam questions, held discussion sessions.

## Publications

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- Clara Meister, Tiago Pimentel, **Luca Malagutti**, Ethan Wilcox, and Ryan Cotterell. On the Efficacy of Sampling Adapters. *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics*, 2023. (Long Paper)
- Afra Amini, Ryan Cotterell, John Hewitt, **Luca Malagutti**, Clara Meister, and Tiago Pimentel. Generating Text from Language Models. *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics*, 2023 (Tutorial Proposal)

## Skills

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**Programming Languages**  
**Tools and Frameworks**  
**Languages**

Python, R, Java, C, SQL,  $\text{\LaTeX}$   
NumPy, Pandas, SciKit, PyTorch, Huggingface, AWS, Git, Docker  
Italian (native), English (C2 level), German (B1 level)

## Selected Projects

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### Divergences for Natural Language Generation

**Oct. 2022 – Apr. 2023**

*Master's Thesis*

*Rycolab, ETH Zurich*

- Supervision by Ph.D. student Clara Meister and Prof. Ryan Cotterell.
- Explored the use of divergence functions as alternative fine-tuning losses for Natural Language Generation models.

### Word Embedding initialization for Knowledge Graph Link Prediction

**Feb. 2022 – Jun. 2022**

*Semester Project*

*ETH AI Center*

- Supervision by Dr. Carl Allen.
- Experimented with improving performance and convergence speed of knowledge graph models through the use of pre-trained neural word embeddings.

### Automatic Textbook Summarization

**Sep. 2021 – Jan. 2022**

*Semester Project*

*NLPED Lab, ETH Zurich*

- Supervision by Ph.D. student Kumar Shridhar and Prof. Mrinmaya Sachan.
- Created, analyzed, and modeled a novel dataset for downstream tasks in educational NLP.

### Deep-Mon

**Feb. 2020 – Jun. 2022**

*Semester Project*

*NECST Lab, Politecnico di Milano*

- Supervision by Dr. Rolando Brondolin and Prof. Marco Santambrogio.
- Improved an eBPF-based container monitoring tool by implementing its memory, disk, and I/O monitoring capabilities, and creating a new CLI.

## Awards

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### Best Freshmen Award

**2018**

*Politecnico di Milano*

- Awarded monetary prize granted to the best-performing freshmen of the 2017-2018 academic year.

### University Tuition Scholarship

**2018, 2019, and 2020**

*Politecnico di Milano*

- Awarded total (2018) and partial (2019, 2020) tuition reduction granted to high-performing students.