Luca Malagutti

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Education

ETH Zurich   Sep. 2020 – Aug. 2023
MSc in Computer Science   *Zurich, Switzerland*
- Overall grade: 5.41/6.0
- Selected courses: Natural Language Processing, Advanced Machine Learning, Machine Perception, Big Data.

Politecnico di Milano   Sep. 2017 – Jul. 2020
BSc Engineering of Computing Systems   *Milan, Italy*
- Final grade: 110/110
- Selected courses: Probability and Statistics, Linear Algebra, Algorithms and Principles of Computer Science.

Work Experience

Thomson Reuters Labs   Apr. 2024 – Present
Applied Research Intern   *Zug, Switzerland*

ETH Zurich   Oct. 2023 – Mar. 2024
Research Assistant   *Zurich, Switzerland*
- Research assistant under the supervision of Prof. Ryan Cotterell.

SEI Novus   Mar. 2022 – Sep. 2022
Data Science Intern   *Zurich, Switzerland*
- Built from scratch a complete NLP pipeline for automatic data extraction from financial documents.

Teaching Experience

Natural Language Processing   2021, 2022, and 2023
Teaching Assistant   *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   2023
Teaching Assistant   *ETH Zurich*
- Instructors: Prof. Ryan Cotterell, Prof. Mrinmaya Sachan, Prof. Florian Tramèr, and Prof. Ce Zhang
- Prepared and marked assignments and exam questions, held exercise sessions.

Publications

- **Luca Malagutti**, Andrius Buinovskij, Anej Svete, Clara Meister, Afra Amini, and Ryan Cotterell. Bringing n-gram Smoothing in the Age of Neural Networks. *Accepted at NAACL 2024* (Long Paper)

- 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

Programming Languages	Python, R, Java, C, SQL, LaTeX
Tools and Frameworks	NumPy, Pandas, SciKit, PyTorch, Huggingface, AWS, Git, Docker
Languages	Italian (native), English (C2 level), German (B1 level)

Selected Projects

Divergences for Natural Language Generation
Master's Thesis

Oct. 2022 – Apr. 2023
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
Semester Project

Feb. 2022 – Jun. 2022
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
Semester Project

Sep. 2021 – Jan. 2022
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
Semester Project

Feb. 2020 – Jun. 2022
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

Best Freshmen Award
Politecnico di Milano

2018

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

University Tuition Scholarship
Politecnico di Milano

2018, 2019, and 2020

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