# Daniel Scalena

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### Education

University of Milano - Bicocca | University of Groningen (CLCG)

Nov 2023 - exp. Q4 2026

Double Doctorate (Ph.D) in Computer Science - NLP

Researching interpretability to improve the safety, reliability, and real-world applicability of generative models.

## University of Milano - Bicocca

Oct 2021 - Oct 2023

Master of Science (M.Sc) in Computer Science, Machine Learning track

- Final Grade: 110/110 with honors, (GPA: 29.7/30)
- Thesis: On the explainability of Large Language Models detoxification.

# University of Milano - Bicocca

Oct 2018 - Jul 2021

Bachelor of Science (B.Sc) in Computer Science

- Final Grade: 110/110 with honors, (GPA: 28.3/30)
- Thesis: Hate speech detection on social networks using state-of-the-art NLP techniques.

# Experience

Research Intern Apr 2023 – Jul 2023

University of Groningen, Computational Linguistic Group

- Aligned LMs to counter hate speech narratives using RLAIF, reaching up to 50% in safety improvements;
- Analyzed and interpreted model behavior shifts after applying post-training algorithms.

Assistant Researcher

Jun 2022 - Apr 2023

C.I.N.I. & University of Milano - Bicocca

- Devised Open Relation Extraction for Italian legal texts, improving previous accuracy by 30%;
- Reduced manual legal document review using ad hoc models;
- Project funded by the Italian Ministry of Justice and Inter-university Consortium for Computer Science.

# ML Engineer (contractor)

Jun 2022 - Aug 2022

 $TESTUDO\ s.r.l.$ 

- Designed and trained deep learning models to predict working hours timestamps;
- Fully automated the company's recognition system.

#### Publications

- 🗹 CALAMITA: Challenge the Abilities of LAnguage Models in ITAlian 🖸

Giuseppe Attanasio, ..., Daniel Scalena

Proceedings at the Tenth Italian Conference on Computational Linguistics, CLIC-it 2024

- 🗹 Multi-property steering of large language models with dynamic activation composition 🖸 Daniel Scalena, Gabriele Sarti, Malvina Nissim

Proceedings at the Seventh BlackBoxNLP (at EMNLP 2024)

- ☑ A gentle push funziona benissimo: making instructed models in Italian via contrastive activation steering ☑

Daniel Scalena, Gabriele Sarti, Malvina Nissim, Elisabetta Fersini

Proceedings at the Tenth Italian Conference on Computational Linguistics, CLIC-it 2024

- ☑ Let the Models Respond: Interpreting Language Model Detoxification Through the Lens of Prompt Dependence ☑

Daniel Scalena, Gabriele Sarti, Malvina Nissim, Elisabetta Fersini

Extended abstract at the Sixth BlackboxNLP Workshop (at EMNLP 2023)

- L' Mind at SemEval-2023 task 11: From uncertain predictions to subjective disagreement

Giulia Rizzi, Alessandro Astorino, Daniel Scalena, Paolo Rosso, Elisabetta Fersini Proceedings of the 17th International Workshop on Semantic Evaluation (SemEval-2023)

# Scholarships and Awards

Google and Apple - BlackBoxNLP (EMNLP 2023) travel award	2023
Full-Fee M.Sc. Scholarship due to merit and financial scores	2021 - 2023
Full-Fee B.Sc. Scholarship due to merit and financial scores	2018 - 2021

# **Projects**

#### Reward LM DanielSc4/RewardLM ☑

- o Python toolkit library for Fine-Tuning and Reinforcement Learning from AI Feedback of Generative LMs;
- $\circ$  Developed tools to interpret and compare toxicity differences between original and fine-tuned models.

# Activities

Co-organiser	Challenge the Abilities of LAnguage Models in ITAlian (CALAMITA) 2024
Teaching	NLP course labs, MSc Data Science @ UniMiB (2024 - 2025)
Reviewer	ACL 2025, LREC-Coling 2024, NAACL 2024*, Information Processing and Management 2024 - 2025, CliC-IT 2023 - 2024, ICML Mechanistic Interpretability Workshop 2024* (*secondary reviewer)
Volunteer	CliC-IT 2021, EMNLP 2023
Misc.	European Researchers Night GroNLP collaborator 2023
Languages	

Italian	C2 - Native Language
English	C1 - Bbetween Foreign Languages 🗹
French	B1