

Gabriele Sarti

PHD STUDENT IN EXPLAINABLE AI AND NATURAL LANGUAGE PROCESSING

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Education

University of Groningen, Center for Language and Cognition

Groningen, Netherlands

Doctorate (PhD) in Natural Language Processing

September 2021 - Present


- Development of interpretability approaches for the study of generative language models in the machine translation domain.
- Supervised by Arianna Bisazza, Malvina Nissim and Grzegorz Chrupała with funding from the  InDeep NWO consortium.
- Co-instructor of the master's course in Natural Language Processing and co-supervisor of several BSc and MSc thesis projects.

University of Trieste, International School for Advanced Studies (SISSA)

Trieste, Italy

Master's of Science (MSc) in Data Science and Scientific Computing

October 2018 - December 2020

- Data Science for Social Sciences track, all courses taught and assessed in English. Graduation score: 110 Cum Laude.
- Thesis:  Interpreting Neural Language Models for Linguistic Complexity Assessment. Supervisors: Felice Dell'Orletta, Davide Crepaldi.

Cégep of Saint-Hyacinthe

Saint-Hyacinthe, Canada

Collegial Studies Degree (DEC) in Management Informatics

August 2015 - June 2018

- All courses taught and assessed in French. Final R Score: 34.13.

Work Experience

Amazon Web Services

New York, United States

Applied Scientist Intern, AWS AI Labs

June 2022 - September 2022

- Research project with Amazon Translate on prompting large multilingual language models for attribute-controlled machine translation.

Aindo

Trieste, Italy

Research Scientist

November 2020 - August 2021

- Generative AI for question answering applied to structured prediction tasks in the clinical domain.
- Experimental work in cross-lingual transfer to Italian for generative language models pre-trained in English.
- Creation of temporally-aware neural recommender system based on graph neural networks for online shopping recommendations.
- Controllable sketch-to-image synthesis for the fashion industry with multimodal pre-trained neural networks (StyleGAN & CLIP).

Institute of Computational Linguistics "Antonio Zampolli" (ILC-CNR)

Pisa, Italy

Research Assistant in Natural Language Processing

October 2019 - December 2019

- Developed a multitask training pipeline for reading times predictions using neural language models. Models were evaluated on linguistic complexity assessment and analyzed using probing and representational similarity methods.

Skytech Communications Inc.

Montréal, Canada

Machine Learning Engineer Intern

February 2018 - June 2018

- Augmented a convolutional neural networks system for automatic record keeping with handwritten characters recognition capabilities.
- Development of a sentiment analysis platform for highlighting inappropriate student comments in professors' evaluation forms.

Talks and Publications

SELECTED PUBLICATIONS

Inseq: An Interpretability Toolkit for Sequence Generation Models

Gabriele Sarti, Nils Feldhus, Ludwig Sickert, Oskar van der Wal, Malvina Nissim, Arianna Bisazza

Annual Meeting of the Association for Computational Linguistics: System Demonstrations (ACL Demo 2023)

RAMP: Retrieval and Attribute-Marking Enhanced Prompting for Attribute-Controlled Translation

Gabriele Sarti, Phu Mon Htut, Xing Niu, Benjamin Hsu, Anna Currey, Georgiana Dinu, Maria Nadejde

Annual Meeting of the Association for Computational Linguistics (ACL 2023)

DivEMT: Neural Machine Translation Post-Editing Effort Across Typologically Diverse Languages

Gabriele Sarti, Arianna Bisazza, Ana Guerberof-Arenas, Antonio Toral

Conference on Empirical Methods for Natural Language Processing (EMNLP 2022)

That Looks Hard: Characterizing Linguistic Complexity in Humans and Language Models

Gabriele Sarti, Dominique Brunato, Felice Dell'Orletta

Hon. mention, Best student paper, *Workshop on Cognitive Modeling and Computational Linguistics (CMCL 2021)*

ETC-NLG: End-to-end Topic-Conditioned Natural Language Generation

Ginevra Carbone, **Gabriele Sarti**

Italian Journal of Computational Linguistics (IJCoL), Issue 6-2, 2020

→  [Full list of publications](#)

SELECTED TALKS

Explaining Neural Language Models from Internal Representations to Model Predictions

Gabriele Sarti, Alessio Miaschi — *Laboratory at AILC Lectures on Computational Linguistics 2023*

Empowering Human Translators with Interpretable Interactive Neural Machine Translation

Gabriele Sarti — *Oral presentation, A glimpse of the future track, XAI4Debugging Workshop at NeurIPS 2021*

Neural Language Models: The New Frontier of Natural Language Understanding

Gabriele Sarti — *Young Chapter of Italian Statistical Society (ySIS), StaTalk 2019*




The Educational Impact of Artificial Intelligence

Gabriele Sarti, Alexandre Brunet — *38th Symposium of Québec Association for Collegial Pedagogy (AQPC), 2018*





→  [Full list of talks](#)

Extracurricular Activity

RESEARCH PROJECTS

2021-Present	Core developer,  Inseq interpretability toolkit
March 2020	Creator of the  COVID-19 Semantic Browser , in collaboration with Area Science Park and AILC
2019	System Demonstration Organizer,  Trieste Next Science Festival , AI-talo Svevo

SOCIAL ENGAGEMENTS

2022-Present	Research and Upskilling Advisor,  AI Safety Initiative Groningen (AISIG)
2021-2022	Team Mentor,  PiCampus School of AI W21 Program
2020	President and Founder,  Artificial Intelligence Student Society (AI2S)
2020-2021	Communication Team Member,  Italian Association for Computational Linguistics (AILC)
2015-2020	Volunteer, AFS Italy and AFS Canada

Honors & Awards

2023	20K€ Grant for Human-AI Interaction Project, Imminent Research Center	Rome (IT)
2023	2K€ eScience Center Fellowship, Amsterdam eScience Center	Amsterdam (NL)
2018	Excellence Scholarship for Data Science MSc Students, SISSA	Trieste (IT)
2018	Valedictorian of the Management Informatics Class of 2018, Cégep of Saint-Hyacinthe	Montréal (CA)
2016	Perseverance Scholarship for Informatics Students, Hydro-Québec	Montréal (CA)
2013	Full merit scholarship towards an AFS exchange year in Canada, Telecom Italia Mobile	Rome (IT)