

# Gabriele Sarti

PHD STUDENT IN COMPUTATIONAL LINGUISTICS, UNIVERSITY OF GRONINGEN

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## Education

University of Groningen, Center for Language and Cognition

Groningen, Netherlands

PhD in Computational Linguistics

September 2021 - Present

- Working on interpretable neural machine translation under the supervision of Arianna Bisazza and Malvina Nissim.
- Part of the NWO-funded network "InDeep: Interpreting Deep Learning Models for Text and Sound".

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

Trieste, Italy

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

October 2018 - December 2020

- Data Science for Social Sciences track, all courses were 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 (SISSA).

Cégep of Saint-Hyacinthe

Saint-Hyacinthe, Canada

Collegial Studies Degree (DEC) in Management Informatics

August 2015 - June 2018

- Graduated with work-study mention with final internship at Skytech Communications under the supervision of Prof. Hugo St-Louis.
- All courses are taught and assessed in French. Final R Score: 34.134.

## Work Experience

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Trieste, Italy

Research Scientist

January 2021 - August 2021

- Structured predictions for the biomedical domain using Transformers for sequence-to-sequence question answering.
- Experimental work in cross-linguistic transfer to Italian for neural language models pre-trained in English.
- Temporally-aware multi-interaction neural recommender systems for online clothes resellers.
- Graph and attention-based neural networks for molecular synthesis and molecular properties prediction.
- Controllable sketch-to-image synthesis for the fashion industry with StyleGANs.

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

Pisa, Italy

Research Assistant Intern in Natural Language Processing

October 2019 - December 2019

- Hosted by Felice Dell'Orletta and Dominique Brunato at the ItaliaNLP Lab. Development of a multitask training pipeline for neural language models leveraging text and human cognitive processing signals. Models were evaluated on complexity assessment tasks and compared by means of interpretability approaches like probing tasks, RSA and CCA.

Skytech Communications Inc.

Montréal, Canada

Machine Learning Engineer Intern

February 2018 - June 2018

- Implemented and deployed a solution based on convolutional neural networks to augment the performances of an automatic record keeping systems by adding handwritten characters recognition capabilities.
- Development of a software platform using sentiment analysis and information retrieval techniques in order to highlight inappropriate student comments in professors' evaluation forms.

## Talks and Publications

### SELECTED PUBLICATIONS

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

Gabriele Sarti, Dominique Brunato, Felice Dell'Orletta

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

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

Ginevra Carbone, Gabriele Sarti

*Proceedings of the 4th Workshop on Natural Language for Artificial Intelligence (NL4AI), AIXIA 2020*

## Italian Transformers Under the Linguistic Lens

Alessio Miaschi, Gabriele Sarti, Dominique Brunato, Felice Dell'Orletta, Giulia Venturi

**Hon. mention, Best student paper**, *Proceedings of the 7th Italian Conference on Computational Linguistics (CLiC-it 2020)*

## Improving Complexity and Acceptability Prediction with Multi-task Learning on Self-Supervised Annotations

Gabriele Sarti

**Hon. mention, Best student paper**, *Proceedings of the 7th Evaluation Campaign of NLP and Speech Tools for Italian (EVALITA 2020)*

## SELECTED TALKS

### Neural Language Models: The New Frontier of Natural Language Understanding

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

### AI – Artificial Irony. The Support of Svevo to the Candidature of Trieste as UNESCO's Literary City

Riccardo Cepach, Cristina Fenu, Giuseppe O. Longo, Gabriele Sarti — *Trieste Next, 2019*

### The Educational Impact of Artificial Intelligence

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

## Extracurricular Activity

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### SCIENTIFIC COMMUNICATION

#### Italian Association for Computational Linguistics (AILC)

Communication Team Member

*Italy*

*January 2020 - Present*

- Promote the field of computational linguistics at local and national scientific festivals (e.g. Bergamo Scienza, European Science Open Forum 2020, etc.) through presentations and interactive demonstrations.

#### Trieste Next Scientific Festival

System Demonstration Organizer

*Trieste, Italy*

*June 2019 - September 2019*

- Implemented an end-to-end system to generate and print generated fake Svevo letters, and organized the 3-day live demonstration "Altalo Svevo: Letters from an Artificial Intelligence" with more than 3000 participants to inform citizens about uses and limitations of natural language generation systems.

### RESEARCH PROJECTS

July 2021	Contrastive Language-Image Pre-training for Italian, HuggingFace JAX/Flax Community Week
March 2020	COVID-19 Semantic Browser, in collaboration with Area Science Park and AILC
May 2019	Diachronic Topic Modeling and Sentiment Analysis of the Svevo Epistolary Corpus, AILC Lectures on CL

### SOCIAL ENGAGEMENTS

2020	President and Founder, Artificial Intelligence Student Society (AI2S)
2015-2020	Volunteer, AFS Italy and AFS Canada
2016-2017	Executive member, Cegep of Saint-Hyacinthe Student Union

## Honors & Awards

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2018	Excellence Scholarship for Data Science Students, SISSA	<i>Trieste, Italy</i>
2018	Valedictorian of the Management Informatics Class of 2018, Cégep of Saint-Hyacinthe	<i>Saint-Hyacinthe</i>
2018	Top Writer, Quora Italia	<i>Italy</i>
2016	Perseverance Scholarship for Informatics Students, Hydro-Québec	<i>Saint-Hyacinthe</i>
2013	Full Merit Scholarship towards an AFS Exchange Year in Canada, TIM	<i>Rome, Italy</i>

## Academic Referees

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### Felice Dell'Orletta

Researcher at the Institute for Computational Linguistics "A.Zampolli" (ILC-CNR), Pisa — [felice.dellorletta@ilc.cnr.it](mailto:felice.dellorletta@ilc.cnr.it)

### Luca Bortolussi

Associate Professor at the Department of Mathematics and Geoscience, University of Trieste — [lbortolussi@units.it](mailto:lbortolussi@units.it)