

Education

University of Milano - Bicocca

Master of Science (M.Sc) in Computer Science

Thesis: Title TBD

Curriculum: AI & Machine Learning

Current Grade: 29.7/30 (weighted average)

Milan, Italy

Oct 2021 – Oct 2023

University of Milano - Bicocca

Bachelor of Science (B.Sc) in Computer Science

Thesis: Hate speech detection on social networks using state-of-the-art Natural Language Processing techniques

Final grade: 110/110 cum Laude

Milan, Italy

Oct 2018 – Jul 2021

Work Experience

University of Groningen, Center for Language and Cognition

Research Intern

Apr 2023 – Jul 2023

Groningen, Netherlands

- I was occupied with the study, research and development of Reinforcement Learning algorithms applied to generative models (LLMs) to modify their behaviour in generating hate speech, effectively automating and controlling the detoxification process;
- Collaborated further on the interpretability of the models themselves, researching the motivations of these generations.

University of Milano - Bicocca, MIND Lab

Assistant Researcher

Jun 2022 – Apr 2023

Milan, Italy

- Research project commissioned by the Italian Ministry of Justice and CINI.
- Open Relation Extraction on criminal sentences - Improving state-of-the-art for technical and legal texts understanding;
- Use of text mining techniques, seq2seq models and transformer-based Large Language Models.

TESTUDO

Machine Learning Engineer

Jun 2022 – Aug 2022

Milan, Italy

- Worked with University MIND Lab team developing deep learning models to predict timestamps regarding working hours;
- I had the opportunity to explore and train deep neural networks on complex and non-ideal data, improving the productivity of the company's automatic systems.

University of Milano - Bicocca

Intern

Mar 2021 – May 2021

Milan, Italy

- University internship in the field of Hate Speech detection using NLP techniques on Tik-Tok social network
- Achieved excellent performance thanks to the use of lexicons and large language models with transformers-based architecture

Publications and thesis

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)

2023

Publication

Natural language processing techniques for recognition of hate speech on social networks

Daniel Scalena, Elisabetta Fersini

2021

Thesis

Projects and courseworks

Reward LM

Spring 2023

Open source Python library

[GitHub](#)

- Python library and toolkit enabling Fine-Tuning and Reinforcement Learning with *Automatic* Feedback (RLAF) of Generative Large Language Models;
- Deeply integrated with HuggingFace and Accelerate frameworks, the de facto standard for models distribution in NLP;
- A structured methodology for measuring model toxicity is provided, allowing measurement with datasets recognised in the scientific literature.

Shared pre-trained detoxified Language Models

Summer 2023

Open source contribution

[HuggingFace](#)

- Sharing a series of models trained to be detoxified, following different techniques listed in a publication in progress;
- The models, in terms of configuration and number of parameters, currently represent the state of the art on the HuggingFace leaderboard.

Music Genre classification with NLP

Winter 2022

Coursework

[GitHub](#)

- Led the development of the project. Two models (SVM and Neural Networks) are compared in music genre classification where NLP techniques are proposed and evaluated to increase performance;
- Achieved and improved top performance on the Kaggle challenge leaderboard.

Inference optimizer for video streaming using masked rCNN

Summer 2021


Personal project

[GitHub](#)

- Improved inference time of a pre-trained model during video export;
- To achieve better performances, an optimization is performed using *ffmpeg*, reducing by almost three times the export time.

-> **Other projects and Open Source contributions** are available on my personal [GitHub profile](#)

Language Skills

Italian	Native Language
English	Badge Bbetween Foreign Languages – English C1 
French	DELF, B1

Activities

TBD	TBD	2020
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