

GIUSEPPE CARRINO

PhD student in Optimization at ENS Lyon
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EDUCATION

PhD in Optimization

ENS Lyon

Mixed-precision optimization for Machine Learning.

Nov. 2025 - Ongoing

Sup. by N.Brisebarre, E.Riccietti, T.Mary

MSc in Artificial Intelligence

University of Bologna

Thesis: "Floating-point approximations for Newton's method".

Sep. 2022 - Oct. 2025

110/110 *summa cum laude*

BSc in Computer Science

University of Bologna

Thesis: "Infrastructure for the comparison of international newspapers".

Sep. 2019 - Jul. 2022

110/110 *summa cum laude*

WORK EXPERIENCE

École normale supérieure, Lyon

Research Intern

Mar. 2025 - Jun. 2025

Sup. by E. Riccietti, T. Mary

- Floating-point **mixed precision error analysis**;
- **Newton** and **Quasi-Newton** methods for optimization.

Amazon Business, Madrid

Software Development Engineer Intern

Sep. 2024 - Feb 2025

- Full-Stack developing using Java and React;
- Enhanced registration page achieving **+2% registrations**.

NTNU, Gjøvik

Research Intern

Sep. 2021 - Nov. 2021

Sup. by Angelo Di Iorio, Gioele Barabucci

- Semantic analyses using **NLP** Python tools.

TALKS

Numerical frugality in optimization: approximated Newton's method

Poster presentation

Poster PDF

- **SIAM Student Chapters** at Politecnico di Milano; 29 Jan. 2026
- **RT - Optimisation** at INSA Lyon; 27 Nov. 2025
- **Google M2L Summer School** at University of Split. 10 Sep. 2025

TEACHING

Teaching Assistant of "Machine Learning"

ENS Lyon

M1 Course

Jan. 2026 - Apr. 2026

- Given practical lectures for ~ 15 students, on theoretical and applied aspects of Machine Learning.

PUBLICATIONS

Mixed precision Newton's method for optimization

Preprint

- First work of my PhD, on the interplay between floating-point and other sources of inexactness in Newton's method for optimization;
- arXiv: <https://arxiv.org/abs/2607.04828>

Comparison of news commonality and churn in international news outlets with TARO

Hypertext Conference 2023

- Won *Ted Nelson Newcomer Award*
- DOI: <https://doi.org/10.1145/3603163.3609062>

Publishing, linking and translating news in multilingual communities: a mirror of cultural differences?

Hypertext Conference 2024

- DOI: <https://doi.org/10.1145/3648188.3675143>

Investigating news coverage and circulation over time in a quantitative manner: the TARO framework

New Review of Hypermedia and Multimedia Journal 2024

- DOI: <https://doi.org/10.1080/13614568.2024.2432300>

PROJECTS

mpNewton - Mixed precision Newton's method framework

- A Python package that allows for the usage of **mixed precision** in **Newton's method** for optimization;
- Available together with tools for convergence rate analysis;
- Ongoing extension to GPU programming.
- <https://gitlab.inria.fr/gcarrino/mpnewton>

TARO - Tons of Articles Ready to Outline

- Developed in the context of Bachelor's internship at NTNU, expanded in subsequent works;
- Framework for the **collection** and the **comparative analysis** of *same topic* newspaper articles;
- Published and presented papers to **Hypertext** conference, winning an *ACM Award* at HT'23.
- <https://github.com/JosephCarrino/ConcepTitle>

SAET - Self-Attentive EmoBERTa for Trigger

- University project for *Natural Language Processing* and *Ethics for Artificial Intelligence* courses;
- Implemented transformer using **BERT-based model** as a backbone, validated on **MELD dataset**;
- Assessment of models' **explainability** with explored and novel methodologies.
- https://github.com/JosephCarrino/NLP_Project

RagnaBot

- University project for *Fundamentals of Artificial Intelligence and Knowledge Representation* course;
- **Autonomous player** for the board game *Tablut*, ranked **2nd** at student competition;
- Used **Java's AIMA library** and **Scikit-Learn** Machine Learning models.
- <https://github.com/JosephCarrino/RagnaBot>

TECHNICAL SKILLS

Programming Languages

- Python
- Java
- TypeScript

Applied math

- Unconstrained optimization
- Linear algebra
- Error analysis

LANGUAGES

Italian

- Native

Spanish

- Intermediate

English

- Fluent

French

- Basic