

Giovanni Duca

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Education

University of Trento, CIMEC

Trento, Italy

M.Sc. in Cognitive Sciences

2023 – present

Computational and theoretical modelling of Language and Cognition

- Machine Learning: understanding of main architectures and algorithms; explainability
- NLP: enabling computers to encode human language
- Cognitive Neuroscience: human perception and cognition; comparison with computational models
- Multimodality: enhanced representations of concepts (focus on vision)

Orientale University of Naples

Naples, Italy

B.A. in Comparative Languages and Cultures

2018 – 2022

- Discourse Analysis: critical abilities on texts (papers, movies, social media, etc.)
- Cultures and Society: in-depth knowledge of eastern-western cultural differences
- Comparative Literature: intertextual analysis and applied critical thinking of literatures

Experience

Research Intern

Paris, France

Inria, [ALMAAnaCH Team](#)

Mar 2025 – July 2025

- Enhance conversational grounding in dialogue systems, improving interaction by dynamically adapting to user comprehension via Reinforcement Learning.

Projects

[pythia4sylo](#): probe an open source LLM (Pythia) with simple syllogisms to check understanding

Unsupervised Federated Learning integrated with SimSiam method

Certifications

[CS50x - Introduction to Computer Science \(HarvardX\)](#)

Dec 2022

IELTS - C1 Academic, 8.0 Overall

Oct 2022

Apple Foundation Program

Dec 2021

Publications

MLLMs Construction Company: Investigating Multimodal LLMs'

Sept 2025

Communicative Skills in a Collaborative Building Task

Marika Sarzotti, *Giovanni Duca*, Chris Madge, Raffaella Bernardi, Massimo Poesio

CLiC-it 2025: Eleventh Italian Conference on Computational Linguistics

Skills & Interests

Programming: C, Python, Swift | PyTorch, Git, Slurm | HTML, CSS, SQLite

Languages: Italian (Native) English (C1 fluent) Spanish (medium) French (medium) Japanese (basic)

Soft Skills: roadmap-setting; leadership; pressure-handling; great communication

Volunteering: promoting collaborative learning environments as a tutor and student representative