

ALESSANDRO ZIRILLI

AI STUDENT RESEARCHER

+39 324 5305399
alexzirilli@gmail.com
alessandrozirilli.com

Fliegenstraße 1,
80337 Munich,
Germany

Research intrests:

- Neural tangent kernel
- Model merging
- MoErging
- Neural networks interpretation
- Computer vision

Languages:

- Italian native speaker
- English IELTS (7.5) (2023)
- French basic knoweldge

Other experiences:

- Unviversity and High school student tutor.
- Participated to "Maths for everybody" divulgation event as staff.
- I participated to three IMUNs, two of them I won the honourable mention.

Other skills:

- Azure and Google Cloud experience, gained during several projects
- Experience with Pytorch, numpy and Wandb
- Python, Flutter, C++ advanced user.
- Swift, Html, MATLAB medium user.

RESEARCH [SCHOLAR][GLADIA]

MASS: MoErging through Adaptive Subspace Selection. [\[arxiv\]](#) [\[github\]](#)

Crisostomi Donato*, Zirilli Alessandro*, Gargiulo A. A., Bucarelli M. S., Scardapane S., Silvestri F., Masi I., Rodolà E. (2025).

Master thesis in Computer Vision - (ongoing)

Advisors: Emanuele Rodolà, L. Leal Taxiè, Orçun Çetintaş

Topics: Deep Learning, Image Segmentation, Computer Vision

- efficiented SAM automatic mask generation by analysing and clustering its attention scores.
- Implemented in PyTorch.

Bachelor thesis - "Deep Learning for Hex"

Advisor: Alessandro Panconesi

Topics: Deep Learning, Reinforcement Learning, Montecarlo methods

- Replicated one of the milestone of Deep Learning, AlphaGo, but applied it to Hex.
- Created an agent capable to explore the game tree using a neural network as oracle.
- Used reinforcement learning to make the network understand train dynamics and strategies.
- Developed in Python and PyTorch.

EDUCATION

TUM, Munich (Exchange) — MSc Computer Science **2024 - now**

GPA: 1,0/ 1,0

Machine Learning for crowd modelling: I deepened my machine learning skills applying them to the agentic-crowd modelling domain. (1.0/1.0)

- Used VAEs to generated people distributions inside a building for a realistic evacuation test.

La Sapienza, Rome — MSc in Computer Science **2023 - now**

GPA: 29,5/31

Human Computer interaction (31/31) [\[github\]](#)

- Developed an air quality device from the case design to the companion app.
- Components choice, pcb design, market analysis, needs finding...

Computer Vision: we developed a real time AI-based fitness coach application, deploying a human pose forecasting transformer. (31/31)

- implemented in PyTorch using a specialised transformer and videos available online.
- Created an UI to provide users feedback about their form.

Advanced ML (29/31) [\[github\]](#)

- predicted the production of solar panels using the weather forecasts and the geographical position, performing time series analysis.
- Implemented in PyTorch, we used diverse appoches from LSTM to custom transformers

La Sapienza, Rome — BSc in Mathematics

2020 - 2023

Grade: 110/110 | GPA: 28,6/31