Gianvito **Losapio**

MSc in Computer Science

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"The most intriguing aspect of artificial intelligence is human intelligence."

Research Interests

Key terms: Deep reinforcement learning, Computational models of perception and cognition
I believe that the powerful alliance between machine learning and neuroscience can lead ourselves towards a larger and more unified view of information processing in the human brain. A key problem in the next future is to unveil how everyday-life concepts are represented and manipulated by neural circuits. With an efficient trade-off between data-driven and model-based approaches, deep reinforcement learning offers exciting opportunities to set up experiments in which ambitious questions in artificial and biological intelligence can be answered at once.

Education

University of Genoa

Genoa, Italy

M.S. in Computer Science (Data Science and Engineering - Artificial Intelligence) — *Oct. 2019 - Mar. 2022*

- Extensive training in machine learning and data science. Basic course in computational neuroscience.
- Scholarship holder at Scuola Superiore IANUA (extracurricular lectures offered to excellent students by high-tech companies and research institutions).
- Thesis: *Efficient Machine Learning for new physics discoveries*
- GPA: 29.17/30 - Final grade: 110/110 *magna cum laude*

Polytechnic University of Bari

Bari, Italy

B.S. in Computer Science and Automation Engineering — *Oct. 2016 - Oct. 2019*

- Thorough overview of basic engineering disciplines, computer science and automatic control systems.
- Thesis: *Deep learning and object detection techniques for the photo-identification of cetaceans*
- GPA: 28.72/30 - Final grade: 110/110 *magna cum laude*

Experience

Politecnico di Milano

Milan, Italy

Research Fellow — *May 2023 - Present*

- Distributed reinforcement learning for industrial production plants
- Supervisor: Marcello Restelli

Machine Learning Genoa Center (MaLGa)

Genoa, Italy

Research Fellow — *Mar. 2020 - Oct. 2022*

- Analysis and implementation of reinforcement learning algorithms for studying animal behaviour in odor navigation tasks
- Supervisor: Agnese Seminara

Master Student

- Analysis and implementation of machine learning algorithms for the discovery of new physics. Experiments with neural networks and innovative large-scale kernel methods on simulated data from Large Hadron Collider at CERN. Collaboration with several researchers at CERN. Co-autorship of some papers.
- Supervisor: Lorenzo Rosasco

European Organization for Nuclear Research (CERN)

Geneva, Switzerland

Summer Student — *Jun. 2021 - Aug. 2021*

- Analysis and implementation of machine learning algorithms with fast inference time for the L1 scouting system at the Compact Muon Solenoid (CMS) experiment. Publication of a technical report.
- Supervisors: Thomas Owen James, Emilio Meschi

National Research Council of Italy (CNR) *Bari, Italy*

Intern *Apr. 2019 - Oct. 2019*

- Development of a state-of-the-art tool for the automatic detection of dolphins' dorsal fins in images, based on an innovative segmentation method and convolutional neural networks. Collaboration with two private research associations devoted to the study of cetaceans, operating in the Jonian Sea and in the Atlantic Ocean. Co-authorship of two papers.
- Supervisors: Vito Renò, Rosalia Maglietta

Publications

Oct 2022 **Learning new physics efficiently with nonparametric methods**
Letizia, M., Losapio G., Rando M., Grosso, G., Wulzer, A., Pierini, M., Zanetti, M. & Rosasco L.
European Physical Journal C (2022) 82: 879

Jul 2022 **Smart balancing of E-scooter sharing systems via deep reinforcement learning: a preliminary study**
Losapio G., Minutoli F., Ferrando A., & Mascardi V.
Selected paper from the 22nd Workshop "From Objects to Agents" (WOA 2021) published on Intelligenza Artificiale *, 16(1), 49-67.*

Dec 2021 **Efficient kernel methods for large scale problems in HEP**
Letizia, M., Losapio G., Rando M., & Rosasco L.
Machine Learning and the Physical Sciences Workshop at NeurIPS, December 13, 2021

Sep 2021 **Machine Learning for 40 MHZ Scouting at CMS**
Losapio G.
CERN Openlab Technical Report, Zenodo

Oct 2020 **Lightweight and efficient convolutional neural networks for recognition of dolphin dorsal fins**
Losapio G., Maglietta R., Politi T., Stella E., Fanizza C., Hartman K., ... & Renò V.
Proc. IMEKO TC-19 International Workshop on Metrology for the Sea, Naples, Italy, October 5-7, 2020.

May 2020 **Combined color semantics and deep learning for the automatic detection of dolphin dorsal fins**
Renò, V., Losapio G., Forenza, F., Politi, T., Stella, E., Fanizza, C., ... & Maglietta, R.
Electronics, 9(5), 758

Other activities

Sep 2022 Poster presentation at the **Mediterranean Machine Learning Summer School 2022**. Organizers: DeepMind, Università di Milano-Bicocca, Apple, Reply, Bending Spoons *Milan, Italy*

Sep 2021 Awarded the prize **SeaFuture Award 2021** for the Bachelor thesis by the Italian Minister for the Economic Development *La Spezia, Italy*

Apr 2021 Raised ∼€20k from University of Genoa to co-found **AI Spot**, a non-profit student association committed to organizing workshops, conferences and cultural events focused on AI and its impact on society *Genoa, Italy*

Jan 2021 Poster presentation at the **Mediterranean Machine Learning Summer School 2021**. Organizers: DeepMind, Università di Milano-Bicocca, Gruppo Sella, Bending Spoons

Oct 2020 Oral presentation at the **International Workshop on Metrology for the Sea**. Organizers: University of Naples Parthenope, National Research Council of Italy, Italian Navy

Aug 2020 Selected for the mentorship program at **LeadTheFuture**, a leading mentorship non-profit organization for top-performing italian students in STEM

Nov 2019 Innovation Team Award, **C1A0 hackathon**, *Diving into the electricty market*. Organizers: Camera di Commercio Genova, DigitalTree, Avanade, IREN *Genoa, Italy*

Skills

Programming Languages Advanced: Matlab, Python | Moderate: LaTeX, Java, C/C++
Italian: native speaker | English: independent user (IELTS 7.5, CEFR level C1)