Lorenzo Palloni

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As a Machine Learning Engineer, I thrive at the intersection of industry and academia, embracing research and engineering with equal fervor. My passion lies in implementing innovative solutions, contributing to open-source projects, and collaborating in multicultural environments to develop products that have a positive impact on the world.

My academic and professional experiences have deepened my passion for Statistics, Computer Science, and Mathematics, with a special emphasis on Machine Learning applications.

Beyond my professional pursuits, I enjoy staying active through weighted calisthenics, expanding my knowledge with non-fiction books on personal development and psychology, embracing my adventurous side with skateboarding, and indulging in my love for techno music.

Education

- *Master's degree*, **Computer Science** 110/110
  - University of Florence (Oct 2018 - Apr 2023)
  - Thesis: "**Optimization Techniques of Deep Learning Models for Visual Quality Improvement**"
- *Bachelor's degree*, **Statistics**, 106/110
  - University of Florence (Sep 2015 - Oct 2018)
  - Thesis: "**A new Python package for Feedforward Neural Networks**"

Work experience

- **Machine Learning Engineer in Research** at *Henesis*, Jul 2022 – Present
  - At Henesis, I contributed to a computer vision research project sponsored by a prestigious global client in the automotive industry. My work primarily focused on instance segmentation and unsupervised anomaly detection tasks. In my role, I followed a comprehensive work cycle that included conducting literature reviews, selecting state-of-the-art techniques to address specific problems, implementing the chosen approaches within the company's machine learning infrastructure, and training and validating the models using mainly PyTorch. In the end, I optimized and deployed the most effective solutions, meeting project requirements and ensuring funder satisfaction.
- **Data Scientist** at *Swiss Reinsurance Company Ltd.*, May 2020 – Sept 2021
  - My primary responsibility involved developing the Swiss Re ADAS risk score, which assessed the relationship between a client's car safety systems and the standard objectives of an insurance company (i.e., claim frequency, severity, and paid losses). To do this, I designed an automated end-to-end pipeline that could handle customizable analyses, from raw similarly-structured data to a final product, using Python, PyTorch, R, PySpark, SQL, Git, and other technologies. The primary models considered during the analysis were GLMs (Generalized Linear Models) with Neural Networks used as feature-extractors, and GBDT (Gradient Boosting Decision Trees).
  - Additional responsibilities included:
    - Assuming a steering role in a partnership project with ETH Zurich.
    - Serving as a deputy in a European project focused on ADAS (Advanced Driving Assistant System).

Selected projects

- **goa (Global Optimization Animations)** - [Python, numpy, matplotlib]
- **Entity Embedding of Categorical Variables implementation** - [Python, TensorFlow 2.0]
- **Convolution operation for images filtering** - [CUDA/C++]
- **pytorch-acai-wae** - [Python, PyTorch]
- **wl-graph-kernels** - [Python]
- **quicknn** - [Python, TensorFlow 1.11]
- **yasa** - [C++, Docker]

Awards

- **1st place (500 €) - Miriade DataGame**
  - Predictive challenge organized by Miriade and BeeViva on 15 March 2018.
