

Luca Benfenati

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Personal website



Formation

- **MSc. Data Science and Engineering @ Politecnico di Torino** Sep 2020 - July 2023
 - Computer science degree focused on Machine Learning and Deep Learning
 - CGPA: 28.6 / 30
 - Final grade: 110 / 110
- **Master's Thesis @ ETH Zurich** Nov 2022 - May 2023
 - Machine learning for seizure detection on EEG data
 - Invited visiting student for a 6 months stay at the Integrated Systems Laboratory
 - Scholarship winner, funded by Politecnico di Torino
 - Topics: large language models, transformers and auto-encoders
- **BSc. Electronic Engineering @ University of Bologna** Sep 2017 - July 2020
 - Merit Scholarship winner
 - Thesis: 'Clustering techniques for multicast precoding in multi-beam satellite systems'
 - CGPA: 28.3 / 30
 - Final grade: 110 / 110 with honours

Experience

- **Data Science Intern @ KPMG Lighthouse** May 2022 - Sep 2022
 - Machine Learning for predictive maintenance and emerging issues detection
 - Improved already deployed algorithms, integrating data from 9 different sources
 - Worked with a team of 10 people, in collaboration with a top-tier automotive manufacturer
 - Skills: Python, PySpark, C++, Data Visualization with Qlik
- **Junior Teaching Assistant @ Politecnico di Torino** Sep 2021 - Mar 2022
 - Assistant of "Data Management and Visualization" course
 - Held laboratory activities together with other teaching assistants
 - Prepared lecture materials (slides and summaries) for the Main Professor
 - Actively managed the student forum
 - Skills: Python, SQL, Tableau

Main Projects (others at my github)

- **Unsupervised and Self-supervised Machine Learning for Epilepsy detection on EEG data** 2023
 - Replicated Unsupervised approaches based Autoencoders and CNN with Anomaly Detection
 - Adapted NLP-inspired Large language models to the EEG scenario
 - Topics: large language models (LLM), transformers and auto-encoders
- **Real-time Domain Adaptation in Semantic Segmentation** 2022
 - Unsupervised Domain adaptation for adversarial learning of CNN
 - Autonomous-driving scenario with two different datasets
 - Topics: Pytorch, adversarial training
- **Edge-Cloud Collaborative Inference for IoT** 2022
 - Inference of "mini" speech commands on edge (Raspberry Pi)
 - Edge-cloud collaborative inference to improve overall accuracy
 - Topics: Tensorflow, Restful API, HTTP, MQTT

Skills

Programming : Python (Advanced), C++ (Intermediate)

Platforms and Technologies : Pytorch, Tensorflow, Tableau, Git, Hadoop, SQL, MongoDB

Languages : English (fluent), Italian (native)