Francesco **Salvi**

MSc student · Computational Science and Engineering

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Education

EPFL

Lausanne, Switzerland

MSc in Computational Science and Engineering — *Sept. 2021 - Jan. 2024*

- Focus on **Machine Learning** (DL, ANNs), **Data Science** and Optimization theory.
- **Class delegate**, representing 40+ students to the Section, the Executive Board and the General Student Association.
- **Student Assistant** for "Machine Learning for behavioral data" (Spring 2022), curating lecture notebooks and tutorials for 50+ students.

University of Bologna

Bologna, Italy

BSc in Physics — *Sept. 2018 - July 2021*

- Grade: **110/110 cum laude**. Final GPA: **29.96/30**, **top 0.25% of all UniBo students.**
- UniBo grant for students with outstanding academic records, awarded to **< 0.5% of students** from the whole university.

Projects

Wikipedia image classification

Intern in dlab — *Feb. 2022 - June 2022*

- Developing a classification taxonomy to label images on Wikipedia and a custom model w/ **TensorFlow** for image classification and embedding.

A data-driven Political Compass

Applied Data Analysis course project — *Sept. 2021 - Dec. 2021*

- Analyzed a datased of ~180 mln quotations with **Apache Spark** within **Python**.
- Leveraged **Topic Extraction** and **Sentiment Analysis** to infer a new Political Compass and curated a data story about US politics.

Disambiguating Voynich Manuscript transliterations

Machine Learning course project — *Sept. 2021 - Dec. 2021*

- Fine-tuned word embedding models (**fastText, Word2vec**) on the task of disambiguating uncertain transliterations, with scarce data.
- Built a benchmark on Italian and Latin and obtained a model with overall accuracy of 86%, subsequently employed with an unknown script.

Investigating congestion with Macroscopic Fundamental Diagrams

Bachelor Thesis — *Feb. 2021 - Jul. 2021*

- Improved a traffic simulation in **C++** on the Emilia-Romagna region, using origin-destination geodata from TIM users.
- Post-processed data with **Python** to extract the MFDs and investigated the effects of hysteresis and spatial heterogeneity wrt congestion.

Simulation of high-energy collisions with Monte-Carlo methods

ROOT course project — *Oct. 2019 - Dec. 2019*

- Reproduced decay processes in a particle collision with a **Monte Carlo simulation**, and analyzed the results using **ROOT framework**.

Extracurricular Activity

Lead The Future

Mentee — *Sept. 2020 - Present*

- Selected to be part of LeadTheFuture, a **leading mentorship organization** for Italian students in STEM, with acceptance rate < 20%.

Orienta|Me

Bologna, Italy

Mentor — *Apr. 2021 - July 2021*

- Selected as Mentor in Orienta|Me, a project promoting university orientation by advising high school students in their academic choice.

Italian Association of Physics Students (AISF)

Bologna, Italy

President of Bologna Local Committee — *June 2019 - June 2020*

- Elected **President of Bologna Local Committee** of AISF, an association gathering toghether more than 1400 Italian physics students.
- Organised conferences, scientific aperitifs, LaTeX courses, visits to research centres and social events with 50+ participants.

Skills

Languages	Italian (native language), **English** (C1 IELTS), **French** (B2 EsaBac)
Programming	C++, Python (pandas, scikit-learn, PyTorch, TensorFlow, Keras, Spark), MATLAB.
Others	ROOT, LabView, LaTeX, Git, GnuPlot.