

# Francesco Salvi

MSC STUDENT · COMPUTATIONAL SCIENCE AND ENGINEERING

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## Education

### EPFL

MSC IN COMPUTATIONAL SCIENCE AND ENGINEERING

Lausanne, Switzerland

Sept. 2021 - present

- 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.

### University of Bologna

BSc IN PHYSICS

Bologna, Italy

Sept. 2018 - July 2021

- Grade: **110/110 cum laude**.
- Final GPA: **29.96/30, top 0.25% of all UniBo students**.

## Projects

### A data-driven Political Compass

APPLIED DATA ANALYSIS COURSE PROJECT

Sept. 2021 - Dec. 2021

- Analyzed a dataset 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

MENTOR

Bologna, Italy

Apr. 2021 - July 2021

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

### Italian Association of Physics Students (AISF)

PRESIDENT OF BOLOGNA LOCAL COMMITTEE

Bologna, Italy

June 2019 - June 2020

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

## Skills

<b>Languages</b>	Italian (native language), <b>English</b> (C1 IELTS), <b>French</b> (B2 EsaBac)
<b>Programming</b>	C++, Python, MATLAB.
<b>Others</b>	ROOT, LabView, LaTeX, Git, GnuPlot.

## Awards

2020, 2021 **1st place (tie)**, @UniBo Study Grant for students that have distinguished themselves for outstanding academic records. Awarded to **< 0.5% of students** from the whole university.