Ernesto Bocini

Lausanne, Switzerland

📱 (+41)77-2262-070　|　✉ ernesto.bocini@epfl.ch　|　⌨ ernestoBocini　|　in ernesto-bocini

Education

École Polytechnique Fédérale de Lausanne (EPFL)
Lausanne, Switzerland

MSc in Data Science　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Sept 2022 - Jul 2024*

- **Relevant courses**: Machine Learning, Network ML, Functional Programming, Distributed Information Systems, Graph Theory, Large-scale data science. Doctoral courses: Deep Learning for NLP, Graph representations.
- **Relevant Activities**: LauzHack, BrainHack Geneve, Google Developers Club EPFL.
- **Teaching Assistant**: Probability and Statistics, Introduction to Machine Learning.

University Of Bologna - Alma Mater Studiorum
Bologna, Italy

BSc in Mathematics and Statics - Curriculum STATS&MATHS　　　　　　　　　　　　　　*Sept 2019 - Jul 2022*

- **Graduated with Distinction**: 110/110 cum Laude, GPA = 29.6/30, top 5%.
- **Award-winning Thesis**: *'Outlier Detection for Multivariate Time Series: A study of Brain Scans in Neuroscience.'*
- **Exchange Semester** in Statistics at **Lund University** (Sweden). Relevant courses: Bayesian Modeling, Stochastic Simulation.

Selected Projects

Knowledge-Enhanced Language Models
Lausanne, Switzerland

EPFL　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Sept 2023 - Jan 2024*

- Utilized RAG techniques to enrich fine-tuned T5 by incorporating factual information from a knowledge graph. Aimed at reducing model hallucinations and enhancing factuality by augmented prompting.

A Comparison of Human and LLMs Wikispeedia Strategy
Lausanne, Switzerland

EPFL　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Sept 2023 - Jan 2024*

- Evaluated Mistral 7B's navigation decisions in *Wikispeedia Game* against human choices to investigate differences in the extracted semantic paths. Used hugging-face libraries and LMQL to instruct the model to follow restrictive instructions.

IT-Alignment and Computer Vision: A Study of O.O.D. Generalization
Lausanne, Switzerland

NeuroAI Lab - EPFL　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Sept 2023 - Dec 2023*

- Project under the supervision of NeuroAI lab. Investigating the relationship between primate IT alignment of several vision models and their generalization to OOD classification tasks.

Drosophila Brain Wiring Diagram with GAT
Lausanne, Switzerland

EPFL　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Feb 2023 - Jun 2023*

- The project employed the Fast-Parapred Model, a variant of Graph Attention Networks (GATs). This model, featuring attention mechanisms, was utilized to predict neuron types and hemilineages from fruit fly's brain connectome with great accuracy.

Work Experience

Summer Research Student
EPFL & Campus Biotech Switzerland

NeuroAI LAB (Prof. Schrimpf)　　　　　　　　　　　　　　　　　　　　　　　　　　*Jul 2023 - Feb 2024*

- Created the first Human Neural Benchmark on the Brain-Score platform, using the fMRI recordings from the NSD dataset. This benchmark allows testing the alignment of the 200+ ANN models submitted on the platform also with human brain activations, instead of primate only.

Data Scientist
Hybrid - Prato

Magniflex　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Jan 2023 - May 2023*

- Supervised a team of Senior Software Engineers in implementing new Machine Learning solutions for the company. Successfully introduced tools to analyze and interpret complex sensor data to boost the studying and scoring of sleep through wearables and smart mattresses.

Achievements

Best Project in Computer Science from Europe (2022)
The Global Undergraduate Awards

- Among 2,812 submissions, a placement within the top 10% Global in the Computer Science category was achieved, securing First Place in Europe. The project has been published in the *Global Undergraduate Library*.

Best Graduate Award in Statistical Sciences 2021/2022
University of Bologna

- The Award celebrates the pinnacle of excellence among students at University of Bologna. This prestigious accolade acknowledges the top 10 graduates in each subject area, considering their exceptional dedication and accomplishments in both academics and community service.

Lead The Future - Mentee
Lead The Future Mentorship

- Among the few Italian STEM students selected to be mentees for LeadTheFuture, with acceptance rate below 15%. LTF empowers top-performing students to achieve their goals by giving them one-on-one guidance from high-impact mentors.

Skills

Programming	Python, Scala, SQL | Spark, Hadoop | Git, LaTeX | HuggingFace, LMQL
Languages	Italian (Native), English (TOEFL 107/120, C1), French (B1)