ROBERTO CERAOLO

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EDUCATION

École Polytechnique Fédérale de Lausanne *September 2021 - Present*
Master of Science in Data Science GPA: **5.2**/6
School of Computer and Communication Sciences
Relevant coursework: Machine Learning, Advanced statistics, Markov Chains, Causal Inference, Applied Data Analysis, Deep Natural Language Processing, Topics in NLP (PhD course)

Università Commerciale Luigi Bocconi *September 2018 - June 2021*
Bachelor of Science in Economics, Management and Computer Science Final grade: **110 cum Laude** / 110
Relevant coursework: Economics, Game Theory, Algorithms, Mechanisms design, Accounting, Quantitative Methods, Machine Learning

WORK EXPERIENCE

Université de Lausanne - HEC Business School and EPFL September 2022 - Present
Graduate Teaching Assistant

· Teaching assistant of the course "Data Mining and Machine Learning" at the University of Lausanne and "Applied Data Analysis" at EPFL. Supported, guided, taught students key ML techniques. Prepared and tested assignments.

EPFL - VITA and LPBS October 2021 - January 2023
Research Assistant

· *Revisiting Weakly-supervised **Causal Representation Learning*** - Worked with the Visual Intelligence for Transportation laboratory, revisiting the state-of-the-art methods for Causal Representation Learning. Researched and implemented a regularization method to make deep learning computer vision algorithms more generalizable to unseen data.
· *Deformation of images using **Generative Adversarial Networks*** - Under the supervision of professor Sahand Rahi the Laboratory of the Physics of Biological Systems at EPFL, developed of a GAN architecture in order to generate realistic deformations of real images of C. Elegans, to be used in case of data scarcity. Learned to use Cloud Computing and reached python proficiency.

Barclays PLC June - August 2020
Business Analyst intern - Technology

· Proposed a new idea to make the classification of technical incidents more efficient through Machine Learning. Outlined a Data Pipeline, choosing several features of interest to be used with a **classification algorithm**.

PROJECTS

Creation of an online learning tool for students through LLMs
Built an online tool that will allow students to learn in a faster, smarter way. With a team, implemented a PDF viewer for lecture slides with contextual search using GPT-3.5. At the same time, leveraging the Pinecone library and embeddings, created a system that allows students to retrieve all the times they've encountered a concept in their university courses. Currently working on possible fixes for hallucination issues of LLMs.

Robust Journey Planner
Together with a team of colleagues, leveraged big data from SBB, the Swiss national railway company, and built a robust journey planner for the city of Zurich, using **Spark and Hadoop**. The results obtained were the same as Google Maps', but we included additional features. Learned to proficiently engineer data, use Big Data languages.

EXTRA-CURRICULAR

Tech stack: Python, Pytorch, Tensorflow, scikit-learn, matplotlib, Numpy, Pandas, Surprise, SQL, Scala, Spark, Hadoop, git version control

Co-Founded Bocconi Students for Data Science, a community of students interested in AI which counted more than **200 members**

Awarded the Aurora Fellows fellowship, that provides an ecosystem of mentors together with a grant of 10000 euros to finance growth experiences.

Languages spoken: Italian mother tongue, fluent English (IELTS 8), intermediate French

Always eager to learn more, build stuff, solve challenges.