ROBERTO CERAOLO

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A FEW WORDS ABOUT ME

People say I ask insightful questions. I have two souls within me: a business one and a computer science one. This duality ensures I maintain a holistic view even when tackling challenging technical tasks.

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, Natural Language Processing, Computer Vision, Deep learning, Reinforcement Learning

Università Commerciale Luigi Bocconi - Milan, Italy *September 2018 - July 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

WORK EXPERIENCE

Schlumberger-Doll Research July 2023 - present
AI Research Scientist intern *Cambridge, Massachusetts, USA*

- As part of the **Maths and Analytics** team, currently researching Deep Learning methods to extract knowledge from well logs, 1D signals from measurements of the Earth Subsurface.
- Contributed to the creation and deployment of a **Vector Search Retrieval** tool for well logs, by using **Variational Autoencoders** and clustering methods to handle high data dimensionality.
- Ran experiments on **GPU cluster**, and introduced new features to the tool, after proving their value from results.
- Reduced data dimension and and RAM usage by **100%**, loading time by **1000%**.

Université de Lausanne - HEC Business School September 2022 - Present
Graduate Teaching Assistant *Lausanne, Switzerland*

- Teaching assistant of the course "Data Mining and Machine Learning" (Sept 2022 - Dec 2022) and then "Cloud and Advanced Analytics" (Jan - Jun 2023) at the University of Lausanne. Supported, guided, taught students key ML techniques and Cloud.

EPFL - VITA and LPBS laboratories November 2021 - January 2023
Student Researcher (semester projects) *Lausanne, Switzerland*

- Weakly-supervised **Causal Representation Learning** for Computer Vision - 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 - out of distribution compositional generalization. (September 2022 - January 2023)
- Deformation of images using **Generative Adversarial Networks** - Together with 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 to train neural networks for classification in case of data scarcity. (November 2021 - June 2022)

Barclays PLC June 2020 - August 2020
Business Analyst intern - Technology *Manchester, United Kingdom*

- 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**.

OTHER PROJECTS

Training an AI Assistant for STEM Education - Together with a team of colleagues, developed an AI assistant for STEM students. This included: data gathering and preparation, training of a reward model (**Deberta**), fine-tuning of a large language model (**Distilled GPT-2**). Used the Antrophic-style **Constitutional AI** approach in order to bias the model towards clarity, correctness, completeness, and rigour answers.

EXTRA-CURRICULAR

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

Co-founded Dreamstyle, a **startup project** with the aim of matching hairdressers and beauticians with their customers, home delivered. Created the Minimum Viable Product to quickly launch in the market.