

# RICCARDO CADEI

## Machine Learning Researcher

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Websites: [www.riccardocadei.com](https://www.riccardocadei.com) [riccardocadei](https://www.linkedin.com/in/riccardocadei) [riccardocadei](https://github.com/riccardocadei) [Riccardo Cadei](https://www.instagram.com/RiccardoCadei)

## Education

### Harvard University

Sept 2022 – March 2023

### Visiting Graduate Student

Cambridge (MA), United States

**Affiliation:** @HSPH, @HDSI **Project:** Causal Inference for Machine Learning  
**@NSAPH:** Interpretable Inference of Heterogeneous Treatment Effects  
(working on 1 methodological paper, 3 applied papers, 1 software paper)  
**Conferences:** HDSI 2022

### EPFL

Sept 2020 – March 2023

### M.Sc. Data Science

Lausanne, Switzerland

**@VITA:** Introducing the Causal (Representation) formalism and a Robust and Adaptive modular architecture for Motion Forecasting. [1], [2]

**@LESO-PB:** Introducing a U-Net (FCNN) based model for detection of available rooftop area to install photovoltaic panels from satellite images. [3]

**Conferences:** CISBAT 2021, NeurIPS 2021, CVPR 2022, NeurIPS 2022

**Summer Schools:** M2L 2020, Neurosymbolic Programming 2022, M2L 2022

### Politecnico di Milano

Sept 2017 – July 2020

### B.Sc. Mathematical Engineering

Milan, Italy

**Grade:** 110/110, **Associations:** PoliMi Data Scientists, Ass. Ing. Matematici

**Thesis:** Mathematical Programming for activity planning in Oncology Day-Hospital

## Experience

### Harvard University

Nov 2022 – Present

Cambridge (MA), United States

**Research Assistant @NSAPH:** Working on development and release of Bayesian Causal Forest-IV algorithm package and its software paper.

### Schlumberger-Doll Research

Feb 2022 – Aug 2022

Cambridge (MA), United States

**Machine Learning Researcher:** Deep Learning for Causal Modeling and interpretation of acoustic subsurface data for anomaly detection and prevention.

### École polytechnique fédérale de Lausanne

Nov 2020 – Feb 2022

Lausanne, Switzerland

**Teaching Assistant:** In Introduction to Machine Learning (BIO-322)

**Research Assistant (Summer Intern) @IGH:** Developing a mobile app for (non-invasive) upper body posture detection using Deep Learning.

### L.O.L. Consultants

Dec 2020 – Feb 2021

[remote] Melbourne, Australia

**Machine Learning Engineer:** Detection of available rooftop area to install photovoltaic panels from high quality satellite images using Deep Learning.

## Publications

- [1] Y. Liu, R. Cadei, J. Schweizer, S. Bahmani, and A. Alahi. "Towards Robust and Adaptive Motion Forecasting: A Causal Representation Perspective". In: *IEEE/CVF International Conference on Computer Vision and Pattern Recognition* (2022).
- [2] Y. Liu, R. Cadei, and A. Alahi. "Towards Robust and Adaptive Motion Forecasting: A Causal Representation Perspective". In: *NeurIPS Workshop on Distribution Shifts: Connecting Methods and Applications*. 2021.
- [3] R. Castello, A. Walch, R. Attias, R. Cadei, S. Jiang, and J. Scartezini. "Quantification of the suitable rooftop area for solar panel installation from overhead imagery using Convolutional Neural Networks". In: *Journal of Physics: Conference Series*. Vol. 2042. 1. IOP Publishing. 2021, p. 012002.

## Awards

Machine Learning

**Generali Data Challenge** 2021  
Best model and code in the Churn Classification Data-hon at @Generali S.p.a out of 280+ participants.

**Higgs Boson Challenge** 2020  
2nd place\* in the AICrowd final challenge of Machine Learning course at @EPFL out of 290+ teams.

**Oracle GraphML Contest** 2019  
1st place in the Kaggle final challenge of Graph Machine Learning course at @Politecnico di Milano in partnership with @Oracle Labs.

**ML for Networking Contest** 2019  
1st place in the Kaggle final challenge of ML for Networking course at @Politecnico di Milano.

\*among the official submissions, 8th overall

Mathematics

**International competition for mathematical and logical games** 2018  
5th national place (ITA), class L2 (Under21).

**Grand Prix of Applied Mathematics**  
5th national place (ITA) out of 7500+ students. 2017  
6th national place (ITA) out of 7500+ students. 2016

## Released Packages

**CRAN: Causal Rule Ensemble (R)** 2022

## Projects

For a structured summary of my personal and academic projects visit my Personal Portfolio clicking [\[here\]](#) or scanning the QR Code on the right.



## Coding

Machine Learning: Python, R, Julia

Deep Learning: PyTorch, TensorFlow

Math: MATLAB, Python, R, AMPL

Big Data: Spark, Scala, SQL, HDFS, AWS

Robotics: RobotC, C, Python

App and Web: HTML, CSS, Android Studio

## Languages

Italian: C2, English: C1, French: A1

## Referees

**Prof. Francesca Dominici** Harvard  
[@fdominic@hsph.harvard.edu](mailto:fdominic@hsph.harvard.edu)

## Other Interests

**Sport:** Marathon Runner (2:53:26) @CRC, Long distance Hiker, Cycle Tourist, Skier and Skater.

**Volunteer:** NIPS, BrixiaAmaTe, AVIS, CARITAS.