RICCARDO CADEI

Machine Learning Researcher

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Education

Harvard University — Visiting Graduate Student

Sept 2022 – March 2023 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)

EPFL — M.Sc. Data Science

Sept 2020 – March 2023 Lausanne, Switzerland

Conferences: CISBAT 2021, NeurIPS 2021, CVPR 2022, NeurIPS 2022
Summer Schools: M2L 2020, Neurosymbolic Programming 2022, M2L 2022
@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]

Politecnico di Milano — B.Sc. Mathematical Engineering

Sept 2017 – July 2020 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. Scartezzini. "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 Datathon 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

Other Interests

Sport: Marathon Runner for @CRC, Long distance Hiker, Cycle Tourist, Skier and Skater.
Volunteer: NIPS, BrixiAmaTe, AVIS, CARITAS.