Curriculum Vitae – Edoardo Carlesi

Personal information

Birth 23/09/1983, Pisa, Italy.
Citizenship Italian
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Education

2014 Ph.D. (Cum Laude) in Theoretical Physics, Universidad Autonoma de Madrid (Spain)

2009 MSc (Cum Laude) in Theoretical Physics, Università degli Studi Roma Tre (Italy)

2005 BS (Cum Laude) in Physics, Università degli Studi Roma Tre (Italy)

Professional Experience

04/2021 – Today Machine Learning Specialist at Top Network S.p.A., Rome, Italy

04/2020 – 04/2021 Machine Learning and Data Science for Astrophysics postdoctoral fellow at the Racah Institute Of Physics, Hebrew University (HU), Jerusalem, Israel

01/2018 – 02/2020 Postdoctoral fellow at the Astrophysikalisches Institut Potsdam (AIP), Potsdam, Germany

10/2014 – 10/2017 Postdoctoral fellow at the Racah Institute Of Physics, Hebrew University (HU), Jerusalem, Israel

11/2010 – 09/2014 Assistant Professor and Ph.D. student at the Universidad Autonoma de Madrid (UAM), Madrid, Spain

03/2012 – 06/2012 Visiting student at the Institute of Astronomy, School of Physics, University of Sydney, Sydney, Australia

05/2008 – 10/2009 Java developer, Sinologische Institut Heidelberg, Heidelberg, Germany

05/2008 – 11/2008 Visting student at the Heidelberg Institut für Theoretische Physik, Ruprecht Karls Universität Heidelberg, Heidelberg, Germany

Academia

Author and co-author of 20+ publications in peer-reviewed journals (Nature Astronomy, MNRAS)

30+ Invited and contributed talks in international conferences

20+ Seminars in international Universities and research centers

IT Skills

OS Linux, Android, Windows

Programming languages C, C++, Python, bash scripting, Java, IDL, matlab/octave

Multithreading & Multitasking MPI and OpenMP, Spark (PySpark) and SparkML, OpenACC

Earth Observations Geopandas, folium, geopy, ArcGis, SentinelHub, EOflow, EOlearn

Machine Learning Python libraries (pandas, numpy, scipy, scikit-learn, Keras/Tensorflow, PyTorch, OpenCV), supervised learning algorithms, unsupervised learning algorithms, deep neural networks, CNNs, GANs

Other languages/packages known TeX, HTML/CSS, gnuplot, OpenOffice, GIT version control

Projects

Earth Observations Development of a data pipeline for satellite imagery acquisition (Sentinel1, Sentinel2), cleaning and pre-processing. Development of Deep Learning models for Cloud Detection and Land Cover / Land Use terrain segmentation based on UNet architectures with PyTorch and Tensorflow.

House Pricing Forecast Development of a data pipeline for social / economic data harvesting (from ISTAT, OpenStreetMap and real estate databases). Development of regression algorithms based on decision trees (Random Forest, Gradient Boosted) for housing price forecast.

ML for Astrophysics Testing and development of a Machine Learning framework (based on decision trees and neural networks) to infer non observable properties (e.g. galaxy mass) from observable ones (e.g. galaxy velocity).

Computational Cosmology Development of high performance computing C/C++ software (`MetroC++, GADGET2, Ginnungagap, AHF`) with MPI/OpenMP bindings for optimized calculations on multitasking and multithreading environments. Running of large simulations (>1Million core-hours) on HPC infrastructure (LRZ, BSC).

MOOC Courses and Certificates

Udemy NLP with Transformers in Python, Python for Finance and Algorithmic Trading, Applied Deep Learning: Deployment of Models on Google Cloud, The Complete Geospatial Datascience with Python Course, Computer Vision Masterclass, Modern Webscraping with Python, Docker Masterclass for Machine Learning, Deep Learning A-Z: Hands-On Artificial Neural Networks, Spark and Python for Big Data with PySpark, Python and Django full stack web development, Python for Data Science and Machine Learning Bootcamp, Python and Machine Learning for Financial Analysis

Coursera Machine Learning, Bayesian Statistics: from Concept to Data Analysis, Python and Statistics for Financial Analysis

Teaching Experience

220 hours of teaching (Physics/Electronics lab.) at the Universidad Autonoma de Madrid, 2011–2014

40 hours of teaching (Electromagnetism) at Universita' Roma 3, 2007–2008

Languages

Italian Mother tongue
English Fluent (C2)
Spanish Fluent (C2)
German Fluent (C1)
French Fluent (C1)
Serbo-Croatian Fluent (C1)
Russian Conversational (B2)
Hebrew Conversational (B2)
Arabic (Levantine Dialect and MSA) Conversational (B2)
Portuguese Basic (B1)
Polish Beginner (A2)
Mandarin Chinese Beginner (A1)