Giacomo Meanti

Curriculum Vitae

Vico dietro il Coro delle Vigne, 5/7
Genova, IT
✉ *giacomo.meanti@gmail.com*

Education

November 2022–Present **PhD Student Fellow**, *IIT*, Genova.
I am currently working on physics-informed machine learning for navigation problems.

November 2019–2022 **PhD**, *Università di Genova*, Genova.
I completed my PhD with prof. Lorenzo Rosasco at the LCSL lab, focussing on the computational and statistical aspects of kernel methods. I worked on the scalability of kernel ridge regression, on hyperparameter tuning, efficient classification, and various applications to real-world datasets. My research interests include scalable kernel methods, efficient machine learning and applications of ML to robotics and the natural sciences.

2022 **Visiting at University of California, Berkeley**.
I spent four months at UCB, under supervision of Prof. Ben Recht, working on large scale kernel methods.

2016–2018 **MSc in Computer Science**, *ETHZ*, Zürich, 5.69/6.
I specialized in statistics and machine learning (Computational Statistics, Multivariate Statistics and Machine Learning courses) focussing in particular on their applications to biology through courses on computational systems biology and statistical models in computational biology.

2018 **Dissertation**, *Protein Contact Network Analysis with Graph Neural Networks*.
Supervisors: Prof. Joachim Buhmann, Dr. Stefan Bauer
This work explored a novel application of graph neural networks to protein structures, with the goal of learning general characteristics of different protein families. An attention-based neural network allowed to identify the most important amino acids for classification.

2013–2016 **BSc in Computer Science**, *The University of Southampton*, Southampton (UK), *Grade: First Class Honours (average 90/100)*.

2016 **Dissertation**, *Modelling Capacitor Patterns To Detect Alignment*.
Supervisor: Dr. Klaus-Peter Zauner
I worked on the optimization of capacitor plate conformation, with the goal of facilitating alignment detection between two objects, constrained by low precision measurements.

Publications

2023 S. F. Keil, G. Meanti, F. Warburg, A. Kanazawa, B. Recht, "K-Planes: Explicit Radiance Fields in Space, Time, and Appearance", Submitted to CVPR 2023

2022 S. Vigogna, G. Meanti, E. De Vito, and L. Rosasco, "Multiclass learning with margin: exponential rates with no bias-variance trade-off", ICML 2022.

2022 D. Lagomarsion-Oneto, G. Meanti, N. Pagliana, A. Verri, A. Mazzino, L. Rosasco, and A. Seminara, "Physics Informed Shallow Machine Learning for Wind Speed Prediction", Energy.

2022 G. Meanti, L. Carratino, L. Rosasco, E. De Vito, "Efficient Hyperparameter Tuning for Large Scale Kernel Ridge Regression", AISTATS 2022.

2021 F. Ceola, E. Maiettini, G. Pasquale, G. Meanti, L. Rosasco, and L. Natale, "Learn Fast, Segment Well: Fast Object Segmentation Learning on the iCub Robot", IEEE Transactions on Robotics, 2021.

2020 G. Meanti, L. Carratino, L. Rosasco, and A. Rudi, "Kernel Methods Through the Roof: Handling Billions of Points Efficiently," in NeurIPS, 2020 (**Oral**).

2018 G. Meanti, S. Bauer, X. Deupi, T. Flock, and J. Buhmann, "Protein Structure Analysis with Graph Neural Nets," in Joint ICML and IJCAI 2018 Workshop on Computational Biology, 2018.

Teaching

2021–2022 **Teaching Assistant for *Machine Learning* course**, *UniGe*.
Duties consisted in preparing the Python labs for an introductory machine learning, as well as providing assistance to students in completing their tasks.

2020–2021 **Introduction to Machine Learning – MAIA course**.
Prepared and taught several introductory machine learning lessons for corporate students through the MAIA program.

Talks

11/2022 *Conference*: Matematica per l'Intelligenza Artificiale e il Machine Learning - Giovani ricercatori @ Politecnico di Torino

2020–2022 Seminars in Computer Science @ UniGE

2021 Research oriented talk at G-Research

2020 Oral presentation at NeurIPS

Awards

2017 **ETH Zürich Scolarship**.
Full scolarship for the MSc in Computer Science at ETH Zürich.

July 2016 **Andy Cranny Memorial Prize**.
£100 award for best dissertation amongst 2016 Computer Science graduates at the *University of Southampton*

Work Experience

January – October 2019 **Modeling Expert**, *Learn to Forecast (l2f)*, Lausanne.
I worked in a team devising time-series models for financial data. Developing forecasting models for prices of different assets and deploying them at scale using cloud technologies. The startup environment led me to quickly learn different roles: puttin ML into production, working with financial data, as well as the unique problems posed by time-series.

October 2017 – December 2018 **Research Assistant**, *ETHZ – Institute for Machine Learning*, Zürich.
I worked at the Institute for Machine Learning on a number of projects also in collaboration with external departments such as chemistry and neuroscience. I analyzed different datasets applying existing statistical techniques and exploringnovel approaches to exploit data-dependent priors. We also worked on sharing our results with the wider research community.

June 2015 **Internship**, *University of Oslo – Department of biostatistics*, Oslo.
My task was to help a research group get started with Hadoop for their data analysis projects. I performed individual research on the Hadoop distributed computing framework while also probing the actual needs of the group. At the end of the internship I delivered a presentation explaining why and how Hadoop could be used in their research.