

Marcello Massimo Negri

PROFILE

Address:

Herbstweg 70, 8050, Zürich, CH
via Mecenate 3, 20138, Milano, IT

Email address: marcellomassimo.negri@unibas.ch

Personal website: <https://mnegri.netlify.app/>

GitHub: <https://github.com/marcello-negri>

Nationality: Italian

Date of birth: 04/01/1998

Languages: Italian, English (IELTS 8/9), German (B1)



WORKING EXPERIENCE

▪ ETH Zurich

Rämistrasse 101, 8092 Zürich, CH

► **Research assistant:** Chair of *Data Analytics Lab* supervised by Prof. T. Hofmann 03/2021-06/2021
I worked on a **deep learning project** in the framework of **gravitational wave physics**: I developed an emulator of complex cosmological simulations and an inverse-regression model to constraint the source of gravitational waves.

► **Research assistant:** Chair of *Systems Design* supervised by Prof. F. Schweitzer 06/2020-03/2021
My work included data analysis tasks for three different research projects where I mainly performed **data collection**, **processing** and **cleaning** tasks, dealing with large datasets in a Python and Unix environment.

EDUCATION

▪ Universität Basel

Peterspl. 1, 4001 Basel, CH

Dr. in Machine Learning

02/2022-ongoing

► In my research I aim to improve machine learning models by leveraging physics knowledge and by using a probabilistic approach. So far, I worked with PINNs, normalizing flows, diffusion models, the UNet and attention mechanisms

▪ ETH Zurich

Rämistrasse 101, 8092 Zürich, CH

M.Sc. in Physics - GPA 5.71/6

09/2019-12/2021

► **Master's Thesis:** Chair of *Biomedical Informatics* Prof. G. Rätsch - **published**
meta-learning • VAEs • priors • few-shot learning • probabilistic machine learning

► **Semester research project:** *Complex Networks* Prof. F. Schweitzer
time series • complex networks • similarity • time-window detection

► **Semester research project:** *Trapped Ion Quantum Information* Dr. F. Reiter
quantum computers simulation • symmetries • exponential computational speed-up

▪ Università Statale degli Studi di Milano

via Celoria 16, Milano, IT

B.Sc. in Physics - 110/110 cum laude

09/2016-07/2019

► **Bachelor's thesis:** "*Machine learning for di-tau invariant mass reconstruction in ATLAS*"
neural network • boosted regression trees • AUC • Higgs physics

PUBLICATIONS

- M. Negri, V. Fortuin, J. Stühmer, "*Meta-learning richer priors for VAEs*", AABI 2022 [pdf](#) and [poster](#)

- F. Arend Torres, M. Negri, M. Nagy-Huber, M. Samarin, V. Roth, "*Mesh-free Eulerian Physics-Informed Neural Networks*", under review, 2022 [pdf](#)

COMPUTER SKILLS

Machine learning libraries:

PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, SciPy

Programming languages:

Advanced: Python, C++, Shell Scripting, LaTeX - **Basic:** R, Mathematica

Operating systems:

Linux, Mac OS, Microsoft Windows