Pier Luigi Segatto, Ph.D.

Data Scientist

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🌐 Lausanne, Vaud, Switzerland

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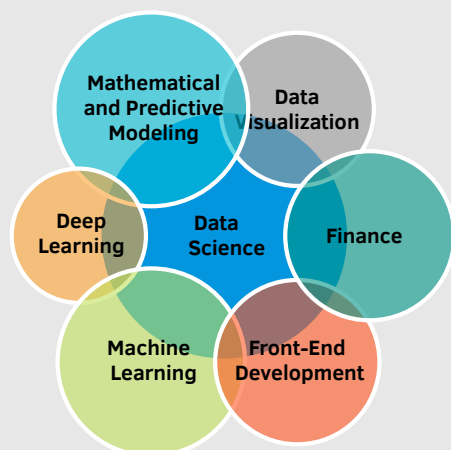
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Technical Skills

Programming Skills

- Python • Matlab • R • C++

- Unix • Microsoft Office • SQL

- LaTeX • Docker • Git

Research

2016 Aug - Present **Doctor of Philosophy- Ph.D** **EPFL** (Switzerland)

- Thesis Title: Modeling of Stream Metabolism from Reach-scale to the Scale of Entire River Networks.
- Gained **data science methodology** and developed strong **problem solving skills**: from business understanding to analytical approach; from data mining to modeling, evaluation, and deployment.
- Performed **numerical analysis** and designed front-end spatio-temporal models for **time series prediction** and **spatial extrapolation** of key variables for climate change.
- Gained expertise in **model optimization** and **parameter estimation**, particularly in the Bayesian framework using Markov chains Montecarlo algorithms.
- Created **machine learning** based models for time series and distributed data regression.
- Developed **statistical analysis** of error propagation in global-scale models.
- Results **published** in prestigious peer-reviewed journals and **presented** in international conferences.

Education

2013 Sep - 2016 Jul **MSc, Environmental Engineering** **UNIPD** (Italy)

- Final Grade: 110/110 cum Laude.
- Thesis Title: Flow and transport modelling in the Bruntland Burn catchment (UK).

2009 Sep - 2013 Jul **BSE, Environmental Engineering** **UNIPD** (Italy)

- Final Grade: 105/110.
- Thesis Title: Limit states and structural analysis of a detached house.

Experience

2016 Aug - 2020 Nov **Scientific Researcher** **EPFL** (Switzerland)

- Developed processed-based models for temporal prediction of ecosystem metabolism and biomass evolution in streams and rivers.
- Developed ML solutions for spatio-temporal prediction of temperature, active radiation, and ecosystem metabolism patterns.
- Investigated climate change effects on stream-networks.

2020 Jan - 2020 Aug **Visiting Research Scientist** **UNIVE** (Italy)

- Worked in collaboration with experienced academic modelers and strengthened my skills in ML.

2015 Sep - 2016 Aug **Research Assistant** **EPFL** (Switzerland)

- Developed hydrological and transport models for the quantification of discharge and travel time distributions of solutes and pollutants.

2008 Jun - 2009 Sep **Intern, R&D selling optimization** **Fluorital S.r.l.** (Italy)

- Dealt with R&D of new manufactures decorative products for various industrial uses along with the process of selling optimization.

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Languages

- French (B1)
- English (C1)
- Italian (C2)

Certificates

- Python for Financial Analysis and Algorithmic Trading (Udemy, Jan 2021)
- Financial Markets
  (Yale University, Jan 2021)
- Machine Learning with Python
  (IBM, Jan 2021)
- Data Visualization with Python
  (IBM, Jan 2021)
- Data Analysis with Python
  (IBM, Jan 2021)
- Databases and SQL for Data Science
  (IBM, Jan 2021)
- Python for Data Science and AI
  (IBM, Jan 2021)
- Data Science Methodology
  (IBM, Jan 2021)
- Tools for Data Science
  (IBM, Jan 2021)
- What is Data Science?
  (IBM, Jan 2021)
- Python
  (Pirple, Nov 2020)

Teaching

2018 - 2019	**Teaching Assistant**	**EPFL** (Switzerland)

- Mathematics, Linear Algebra, Physics.

Accomplishments and Scholarships

2020 Nov — **FNSNF Swiss National Science Foundation**

- SNF mobility grant winner.

2015-2008 — **Veneto Regional Scholarhip**

- Scholarship for students with an outstanding curriculum.

2015 — **Student Excellence "Ivano Pastro" grant**

- Won the Student Excellence "Ivano Pastro" grant for the best results in the Bachelor program among students of class 2008-2013.

Publications

- Horgby Åsa, Segatto Pier Luigi et al. "*Unexpected large evasion fluxes of carbon dioxide from turbulent streams draining the world's mountains.*" Nature communications 10.1 (2019): 1-9.

- Segatto Pier Luigi, Tom J. Battin, and Enrico Bertuzzo. "*Modeling the coupled dynamics of stream metabolism and microbial biomass.*" Limnology and Oceanography (2020).

- Pier Luigi Segatto, Tom J Battin, and Enrico Bertuzzo. "*Data-driven machine learning unveils emerging properties of metabolic regimes at the scale of an entire stream network.*" Manuscript submitted for publication in Ecosystems, 2020b.

- Pier Luigi Segatto, Tom J Battin, and Enrico Bertuzzo. "*A network-scale modeling framework for stream metabolism, ecosystem efficiency and their response to climate change*". Manuscript submitted for publication in Water Resources Research, 2020b.

About me

6 years of experience as a mathematical modeler, data scientist, quantitative analyst, data analyst, and programmer.

During my studies, I have developed both a technical and financial background. I have intensely been involved in problem-solving situations and engineering tasks. I was involved in the development of models simulating entire ecosystem dynamics at a multiscale level, using spatially explicit approaches and machine learning with the explicit goal of making predictions on future changes of key variables. I have constantly been dealing with very large data sets at a global scale and their processing in different programming languages. Moreover, I deeply strengthened my communication skills by making clear and understandable visualizations of datasets and presenting them to heterogeneous audiences.

I am passionate about machine learning and I made it a core asset of my Ph.D. dissertation. Moreover, I have a keen interest in finance, quantitative trading, and the direct application of data science and machine learning to this topic. I took many courses about finance, global business environment, risk analysis, operations and economics, etc., both at EPFL and on independent platforms. I am highly motivated in pursuing this path.