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Date of birth: 9 May 1996
Residence: Padova, Italy

Daniele Zago

Curriculum Vitae

Work experience

Oct 2024 – Present **Data Scientist**, *Optit S.r.l.*, Bologna, Italy

Oct 2022 - Dec 2022 **Teaching assistant**, *Department of Developmental Psychology and Socialisation, University of Padua*, Padua, Italy
- Teaching activities: lectures on introduction to R programming and data analysis

2018 – 2021 **Academic tutor**, *Department of Statistical Sciences, University of Padua*, Padua, Italy
- Teaching activities: lectures on calculus (*Analisi Matematica*)

Education

2021 – 2024 **Ph.D. in Statistical Sciences**, *University of Padua*, Padua, Italy
- Advisor: prof. Giovanna Capizzi; Co-advisor: prof. Peihua Qiu
- Research topic(s): **online outlier detection** and **stochastic optimization**

Visiting research scholar, *University of Florida*, Gainesville, FL, USA
Visiting period: Jan 2023 – Dec 2023

Oct 2022 **Thirteenth INFN International School on Efficient Scientific Computing**, *Istituto Nazionale di Fisica Nucleare and University of Perugia*, Bertinoro, Italy
- Efficient C++ programming
- GPU programming with CUDA

2019 – 2021 **M.Sc. in Statistical Sciences**, *University of Padua*, Padua, Italy
Final grade: **110/110 cum Laude**, GPA: **29.5/30**
- Topics: Data science, statistics for industry, outlier detection, time series analysis

Jul 2020 **Summer school in Mathematics**, *University of Perugia*, Perugia, Italy

2016 – 2019 **B.Sc. in Statistics for Technology and Sciences**, *University of Padua*, Padua, Italy
Final grade: **110/110 cum Laude**, GPA: **29.2/30**
- Topics: Big data analytics, computational statistics, programming, design of experiments

Relevant projects and courses

Freelance Consulting **Structural monitoring of "dell'Angelo" hospital in Mestre, Venice**
- Technologies: **R**, **C++**, **git**
- Developed a sequential monitoring system designed to detect anomalies in vibrating string strain gauges on behalf of Expin S.r.l.
- Leveraged advanced statistical process monitoring methodologies combined with a novel algorithm for optimal alarm threshold selection. The solution provided a more accurate and responsive anomaly detection system compared to the preexisting approach.

Academic Consulting **Statistical Consulting (Ph.D. course)**
- Technologies: **R**, **git**
- Carried out a consulting project as part of the Ph.D. program coursework.
- Evaluated performance differences between two distinct types of concrete blocks, investigated the correlation between glass fiber content and tensile strength.
- Used quantitative testing methods to assess concrete structural integrity under varying loads.
- **Emphasis on**: understanding the applied context and the goals of data analysis, developing goal-driven solutions, writing and efficiently communicating the results.

Software **StatisticalProcessMonitoring.jl: A general solution for online outlier detection**

- Technologies: **Julia**, **git**, **continuous integration**
- Developed a Julia package for statistical process monitoring and online outlier detection.
- Project management via agile methodologies and continuous integration.
- Main features: complex control charting and control limit calibration, black-box hyperparameter optimization

Conference presentations

Oct 2023 Optimal constrained design of control charts using stochastic approximations.
Invited talk. *2023 INFORMS Annual Meeting*, Phoenix, AZ, USA

Sep 2022 Profile monitoring based on adaptive parameter learning.
Poster presentation. *Statistical methods and models for complex data*, Padova, Italy

Jun 2022 Bayesian nonparametric multiscale mixture models via Hilbert-curve partitioning.
Poster presentation. *2022 ISBA World meeting.*, Montréal, Canada.

Publications

Zago, D. (202+). "StatisticalProcessMonitoring.Jl: A General Framework for Statistical Process Monitoring in Julia". In: *To appear in: Journal of Statistical Software*.

Zago, D., Capizzi, G., and Qiu, P. (2024). "Optimal Constrained Design of Control Charts Using Stochastic Approximations". In: *Journal of Quality Technology*.

Zago, D. and Capizzi, G. (2023). "Alternative Parameter Learning Schemes for Monitoring Process Stability". In: *Quality Engineering*.

Awards

2022 Young Travel Award, ISBA 2022 conference, *Montréal*, *Canada*

2018 Mille e una Lode Award 2018, (top 3% of students at the University of Padua)

2017 Mille e una Lode Award 2017, (top 3% of students at the University of Padua)

Skills

Programming	Python, Julia, R, SQL, C++, C, SAS, bash
Other	git, GitHub, Google Cloud, Microsoft Office, Jekyll
Competencies	Outlier detection, stochastic optimization, machine learning, data visualization
Soft skills	Public speaking, teamwork, project management, critical thinking, adaptability
Languages	Italian (native), English (fluent, C2), German (moderate), Spanish (moderate)