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### 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*)

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### 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

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### Relevant projects and courses

- Freelance **Structural monitoring of “dell’Angelo” hospital in Mestre, Venice**
- Consulting
- 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 for optimal alarm threshold selection. The solution provided a more accurate and responsive anomaly detection system compared to the preexisting approach.
- Academic **Statistical Consulting (Ph.D. course)**
- Consulting
- 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, test-driven development, continuous integration**
  - Developed a Julia package for statistical process monitoring and online outlier detection.
  - Project management via agile methodologies, test-driven development, and continuous integration.
  - Main features: complex control charting and control limit calibration, black-box hyperparameter optimization

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## 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.

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## Publications

Zago, D. (202+). “StatisticalProcessMonitoring.Jl: A General Framework for Statistical Process Monitoring in Julia”. *Journal of Statistical Software (forthcoming)*.

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

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

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## 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)

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## 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)