

# Sebastiano Grazzi

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Date of Birth: 18th May 1994

Place of Birth: Cattolica (RN, Italy)

## RESEARCH INTERESTS

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Monte Carlo, Markov chains, approximate sampling, scalable methods, variable selection, epidemic modeling, computational physics

## CURRENT POSITION

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### Research Associate

Sep 2022 - ongoing

*University of Warwick, Department of Statistics*

Funding: “CoSInES: Computational Statistical Inference for Engineering and Security”

Supervisor: Gareth Roberts

## EDUCATION

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### Ph.D. in Mathematics

Sep 2018 - Sept 2022

*Delft Institute of Applied Mathematics (DIAM), TU Delft*

Project: “Bayesian inference for high dimensional diffusion processes”

Funding: “Stochastics - Theoretical and Applied Research (STAR)”

Supervisors: J. Bierkens, F. van der Meulen

### Double Degree Program (with scholarship)

Apr 2018 - Oct 2018

*Department of Mathematics, LMU Munich*

Final Mark: 1.3. Scale from 1.0 (best) to 5.0 (worst)

Thesis: “Rough Models for Realized Volatility”

Supervisor: Prof. F. Biagini

### M.Sc. in Quantitative Finance (with scholarship)

Sep 2016 - Oct 2018

*Department of Statistical Sciences, University of Bologna*

Final Mark: 110 / 110 cum Laude

### Post-Graduate Diploma in Mathematical Finance (with scholarship)

Nov 2017 - Mar 2018

*Department of Mathematics, University of Bologna*

Final Mark: 30/30

### Overseas Exchange (with scholarship)

Jul 2017 - Nov 2017

*School of Science & Business, University of Technology, Sydney*

### B.Sc. in Statistical Sciences (with scholarship)

Sep 2013 - Jul 2016

*Department of Statistical Sciences, University of Bologna*

Final Mark: 110 / 110 cum Laude

Thesis: “Spectral Estimation: Methods and Applications”

### Erasmus Exchange (with scholarship)

Sep 2015 - Jun 2016

*School of Computing, Electronics and Mathematics, Plymouth University*

### Degree in Music, Oboe Instrument

Nov 2004 - Jul 2012

*Conservatorio “G. Rossini”, Pesaro* Final Mark: 9.5/10

### High School Diploma, Classical studies

Sep 2008 - Jun 2013

*Liceo Classico “T.Mamiani”, Pesaro*

## PREPRINTS & PUBLICATIONS

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*Stochastic Gradient Piecewise Deterministic Monte Carlo Samplers*, with P. Fearnhead, C. Nemeth, G. Roberts.

Submitted to **AISTATS 2024** [[Link](#)]

*Methods and applications of PDMP samplers with boundary conditions*, with J. Bierkens, G. Roberts, M. Schauer.

Submitted to the **Journal of the Royal Statistical Society, Series B** [[arXiv: 2303.08023](#)]

*Design and applications of Monte Carlo methods based on piecewise deterministic Markov processes*,

**PhD dissertation, 2023.** [[Link](#)]

*Sticky PDMP samplers for sparse and local inference problems*, with J. Bierkens, F. van der Meulen, M. Schauer.

**Statistics and Computing 33.1, 2023.** [[arXiv: 2103.08478](#)]

*The Boomerang sampler*, with J. Bierkens, K. Kamatani and G. Roberts.  
**International Conference on Machine learning, 2020.** [[arXiv: 2006.13777](#)]

*A piecewise deterministic Monte Carlo method for diffusion bridges*, with J. Bierkens, F. van der Meulen, M. Schauer.  
**Statistics and Computing 31 (37), 2021.** [[arXiv: 2001.05889](#)]

*Bayesian inference for SDE models: a case study for an excitable stochastic-dynamical model*, with F. van der Meulen, M. Mider, M. Schauer, 2020.  
**NextJournal article.** [[Link](#)]

## **AWARDS & SCHOLARSHIPS**

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Second position at the <i>Innovation Accelerator for interdisciplinary research</i> University of Leicester	Sep 2023
<b>200 USD</b> Travel award: Bayescomp 2023, Levi, Finland	Mar 2023
<b>1000 EUR</b> bonus as a token of special appreciation for teaching the course: Introduction to mathematical Statistics	Sep 2021
<b>750 USD</b> Travel award: Bayescomp 2021, Gainesville, Florida	Jan 2020
<b>1000 EUR</b> : “Scholarship for Explorable Research” by NextJournal for the project: <i>Exploring and Statistically Learning an Excitable Stochastic-Dynamical Model</i> , with M. Schauer. [ <a href="#">Link</a> ]	May 2019
<b>3500 EUR</b> Scholarship awarded for the Double Degree Program. LMU Munich	Apr 2018
<b>5000 EUR</b> Scholarship awarded during the Post-graduate Diploma in Mathematical Finance	Nov 2017
<b>5000 EUR</b> awarded for the Overseas Exchange Program at the University of Technology, Sydney	Jul 2017
<b>3500 EUR</b> Scholarship awarded for the M.Sc in Quantitative Finance. University of Bologna	Sep 2016
<b>3500 EUR</b> Scholarship awarded for the Erasmus Exchange Program at the University of Plymouth	Sep 2015
<b>1200 EUR</b> Scholarship awarded during the B.Sc in Statistical Sciences. University of Bologna	Dec 2013

## **LEADERSHIP AND ORGANIZATION**

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<b>Organiser</b> of the Masterclass on the topic of <i>Interactions between Computational Statistics and Computational Physics</i> University of Warwick.	March 2024
<b>Co-organiser</b> of the Masterclass in <i>Parallel computing</i> Lancaster University.	Sep 2023
<b>Organiser</b> of the reading group: <i>recent advances in Computational Statistics</i> with Andi Wang, University of Warwick.	Apr 2023
<b>Organiser</b> of the Masterclass in <i>Optimal Transport</i> University of Warwick.	Apr 2023
<b>Chair</b> of the contributed session <i>Piecewise deterministic Monte Carlo: Theory</i> BayesComp 2023, Levi, Finland.	Mar 2023
<b>Organiser</b> of the <i>roundtable on PDMPs: applications and practical computations</i> University of Warwick.	Jan 2023

## **INVITED SEMINARS**

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<b>Algorithmic seminars 2022</b> , University of Warwick	Jan 2023
<b>EC Bayes Seminar</b> , Queensland University of Technology, online	Nov 2022
<b>Seminar on stochastic</b> , TU Bergakademie Freiberg, online	Nov 2021
<b>PhD seminars in probability and statistics</b> , TU Delft, online	Mar 2021
<b>Algorithmic seminars 2020</b> , online, University of Warwick, online	Apr 2020
<b>PhD seminars in probability and statistics</b> , TU Delft	Jan 2019

## INVITED TALKS

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<b>World Congress in Probability and Statistics 2024</b> , Bochum, Germany	Aug 2024
<b>MCM 2023</b> , Paris, France	Jun 2023
<b>BayesComp 2023</b> , Levi, Finland	Mar 2023
<b>Third Italian meeting on Probability and Mathematical Statistics</b> , Bologna	Jun 2022
‘ <b>BaNaNa talk</b> ’, workshop day organized by SIAM student chapter Delft	Nov 2021
<b>BayesComp 2020</b> , Gainesville, Florida	Jan 2020
<b>Dynstoch: Statistical Methods for Dynamical Stochastic Models</b> , Delft, the Netherlands	Jun 2019

## CONTRIBUTED TALKS

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<b>Masterclass in Parallel computing</b> , Lancaster, UK	Sep 2023
<b>Bayes4Health/CoSInES Workshop</b> , Oxford, UK	Mar 2023
<b>On Future trends and opportunities for Monte Carlo Methods</b> , Warsaw, Poland	Dec 2022
<b>Computational methods for unifying multiple statistical analyses</b> , Marseille, France	Oct 2022
<b>MCQMC</b> , Linz, Austria	Jul 2022
<b>Bayes at CIRM 2021</b> , Marseille, France	Oct 2021
<b>MCM 2021</b> , Universität Mannheim, online	Aug 2021
<b>ICML 2020</b> , online	Jul 2020

## POSTERS

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<b>Lunteren Stochastics Meeting 2021</b> , Lunteren, the Netherlands	Nov 2021
<b>Workshop: Non-reversible Markovian Monte Carlo</b> , Leiden, the Netherlands, online	July 2021
<b>Statistics conference in honour of Aad van der Vaart’s 60th birthday</b> , Leiden, the Netherlands	Jun 2019
<b>SDEs/SPDEs: Theory, Numerics and their interplay with Data Science</b> , Heraklion, Greece	Jun 2019

## COURSES AND WORKSHOPS

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<b>Masterclass on the topic of Interactions between Computational Statistics and Computational Physics</b> , University of Warwick	Mar 2024
<b>Masterclass in Parallel computing</b> , Lancaster University	Sep 2023
<b>Masterclass in Optimal Transport</b> , University of Warwick	Apr 2023
<b>Masterclass in Variational Inference</b> , University of Cambridge	Nov 2022
<b>Unifying Theory for Non-Reversible Markov Chains</b> , University of Bristol	Aug 2022
<b>PhD Course on Sequential Monte Carlo Methods</b> , Linköping University, online	Aug 2021

## TEACHING AND MENTORING

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<b>Lecturer for the course ST329: Topics in statistics - rare-event estimation</b> <i>University of Warwick, UK</i>	q2, 2023-2024
<b>Teaching assistant for the course: Introduction to mathematical statistics</b> <i>Delft University of Technology, the Netherlands</i>	2019-20, 2020-21, 2021-22
<b>PhD mentor</b> <i>Delft University of Technology, the Netherlands</i>	Sep 2020 - Sep 2022

## ACADEMIC ACTIVITIES

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<b>Research Committee member</b> , Statistics Department, University of Warwick	Oct 2023 - ongoing
<b>Reviewer</b> for the Journals: <i>Statistics and Computing</i> , <i>AISTATS</i>	Jan 2022 - ongoing

**Contribution to the RSS (Royal Statistical Society) Discussion Meeting:**  
*Quasi-stationary Monte Carlo methods and the ScaLE algorithm* [\[Link\]](#)  
with J. Bierkens, K. Kamatani.

Jun 2020

## **PROGRAMMING SKILLS**

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**Julia developer**

**Author of the official Julia package `ZigZagBoomerang.jl`**, with M. Schauer [\[Link\]](#)

**Proficient: Python, R, MatLab, C, C++, Java**

**Basic knowledge: html**

## **LANGUAGE SKILLS**

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**Fluent: English, Italian**

**Elementary: German, Dutch, Spanish**

## **PROFESSIONAL EXPERIENCE**

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**Sailing Teacher and Coach**

*Yacht Club Ascona (YCAS), Ascona (Switzerland)*

Summer seasons 2015 and 2016

**Lifeguard**

*Spiagge libere, Pesaro (Italy)*

Summer season 2014

**Crew member**

*Sailing boat: "Moro di Venezia", Portofino (Italy)*

Summer seasons 2012 and 2013

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