

## Lorenzo Marino



### Education

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- 10/2018 – 10/2021      Doctor of Philosophy (PhD) in Mathématique Appliquée  
at Université Paris-Saclay, France and at Università di Pavia, Italy.
- Supervisors: Prof. Stephane Menozzi (Paris-Saclay), Prof. Enrico Priola (Pavia).
  - Fundings: Labex de Mathématique Hadamard (LMH),  
Fondation Mathématique Jacques Hadamard (FMJH)  
IDI program of IDex Paris-Saclay.
  - Dissertation title: “Regularization by noise in a degenerate and integro-differential framework” – The purpose would be to study phenomena restoring uniqueness for some ill-posed ODEs. The idea is to perturb the dynamics by a noise acting only on some components of the ODE and propagating through the other ones thanks to a weak Hormander like condition (framework of the Kolmogorov degeneracy). The noise would be as well a jump process (integro-differential framework for the generator of the noise). Numerous questions arise: minimal assumptions leading to uniqueness (weak/strong), what can be the behavior of the perturbed dynamics when the intensity of the noise goes to zero? Can some large deviation results be established for such processes?  
Eventually, what can be said when the dimension grows, going possibly to infinity?
- 10/2016 – 07/2017      Master in Advanced Studies (MASt) in Mathematical Sciences  
at University of Warwick, UK.
- Supervisor: Prof. Xue-Mei Li.
  - Dissertation title: “Transport Equations with Low Regularity Vector Fields” – Studied uniqueness and existence of a particular first order partial differential equation from the standard smooth case to a low regular context, when only a Sobolev vector field is considered, following Lions-Di Perna’s work “*Ordinary differential equations, transport theory and Sobolev Spaces*”. In conclusion, given an example of how these methods could be applied to the stochastic cases when a random perturbation is added to the equation.
  - Attended modules: Stochastic Analysis; Brownian Motion; Advanced Real Analysis; Dynamical Stochastic Control; Dynamical Systems; Risk theory.

- 09/2012 – 03/2016 Bachelor's degree (BSc) in Pure Mathematics at University of Genova, Italy
- Final Mark: 110/110 Magna cum Laude.
  - Supervisor: Prof. Ernesto De Vito.
  - Thesis title: "Disintegration Theorem and its Application to Conditional Probabilities" – Examined the conditions under which a measure on a product space can be represented as a product of measures defined on the marginals spaces. Applied the theorem to the study of the existence of abstract conditional distributions, following Pollard's book "A User's Guide to Measure Theoretic Probability".
  - Most relevant modules: Institutions of Higher Analysis; Basics in Higher Geometry; Complex Analysis; Game Theory; Probability.

## Attended Conferences

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- 26-28/09/2018 Kolmogorov days in Evry at University of Evry Val d'Essonne (FR).
- 11-15/03/2019 Perturbation Techniques in Stochastic Analysis and Its Applications at Centre International de Rencontres Mathematiques (CIRM) in Marseille, France. Presented a talk on "Schauder estimates for degenerate stable Ornstein-Uhlenbeck operators".
- 17-20/06/2019 Second Italian Meeting on Probability and Mathematical Statistics at Vietri sul Mare, Italy. Presented a talk on "Weak well-posedness for degenerate SDEs driven by stable processes".
- 18-20/07/2019 Recent Trends in Stochastic Analysis and SPDEs at University of Pisa, Italy.
- 23-27/09/2019 Summer School "New Frontiers in Singular SPDEs and Scaling Limits" at Hausdorff research Institute for Mathematics (HIM) in Bonn, Germany.

## Relevant Experiences

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- 07/2018 - 09/2018 Taken part in the Mongol Rally 2018  
A charity non-competitive rally from Prague to Ulan-Udè (Russia).
- Raised more than 1000£ to give in charity to "Cool Earth" and "Movimento Centro Storico Ragazzi" through sponsorship and charity events.
- 2011 - 2016 Private Tutor  
Undergraduate and High school students tutoring in Mathematics and Physics.
- Improved teaching using simple MATLAB codes, especially for graphical explanations.
  - Focused on showing the pupils the beauty of mathematics through jokes, stories or history of mathematics.

2011 - 2016 **Scout movement Master**  
at Genova IV, Via F. D. Guerrazzi 23, 16146 Genova, Italy.

- Responsible for groups of 30 children for periods up to two weeks on camping sites.
- Improved non-verbal communication gained through supporting an invalid child.
- Enhanced planning skills (organized a wedding party in 2012 and various Scout camps through the years).

2005 - 2010 **Elite Tennis Player**  
at Tennis Club Le Palme, Via T. Campanella 4, 16146, Genova, Italy.

- Played different regional tournaments as single player or in teams.

## Relevant Skills

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Mother tongue Italian

Other languages

English: IELTS Academic Certificate on date 11/04/2015.

Reading	Listening	Speaking	Writing	Overall
8.0	7.5	6.5	6.5	7.0

French: Basic level.

IT Skills

- Proficient in Office suite (Word processor, presentation software).
- Proficient in MATLAB programming language gained through various academic modules.
- Proficient in LaTeX word processor, used for the composition of dissertations.
- Basic command of C++ programming language gained through various academic modules.
- Basic command of HTML5 markup language for creation of websites.

Training Undertaken

Participated the following workshops through Careers and Skills department at University of Warwick (2016-2017):

Literature Review for Science Masters, Becoming More Assertive, Critical Writing, Introduction to Emotional Intelligence, Organising References using EndNote.

Driving licences

Full clean italian licenses: B, A1, A2, A.

## References

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Available on Request.