

# Paolo Perrone

*Matematico e insegnante*

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Dept. of Computer Science  
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## *Curriculum Vitae*

### Dati personali

Nome e cognome Paolo Perrone  
Data di nascita 10 Novembre 1989  
Luogo di nascita Bergamo (Italia)  
Nazionalità Italiana

### Posizione attuale

Istituto University of Oxford, Inghilterra (U.K.)  
Dipartimento Informatica  
Posizione Research associate  
ufficiale  
Supervisore Sam Staton

### Posizioni passate

- 2020 **Ricercatore di matematica**, *Massachusetts Institute of Technology (MIT)*,  
Cambridge, MA (U.S.A.)  
Supervisore: David Spivak. Denominazione ufficiale (in inglese): postdoctoral  
associate in Mathematics.
- 2019 **Ricercatore di matematica**, *York University*, Toronto, ON (Canada)  
Supervisore: Walter Tholen. Denominazione ufficiale (in inglese): postdoctoral  
visitor, Mathematics.
- 2019 **Ricercatore di matematica**, *Max Planck Institute for Mathematics in the  
Sciences*, Lipsia (Germania)  
Supervisore: Jürgen Jost. Denominazione ufficiale (in tedesco): Wissenschaftlis-  
cher Mitarbeiter im Fachbereich Mathematik.

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## Istruzione

- 2018 **Dottorato in Matematica**, *Max Planck Institute for Mathematics in the Sciences e Università di Lipsia*, Lipsia (Germania), *Magna cum laude*  
Relatore: Jürgen Jost. Denominazione ufficiale (in tedesco): Doktor der Naturwissenschaften (Dr. Rer. Nat.) im Fachbereich Mathematik.
- 2013 **Laurea magistrale in Fisica**, *Università degli Studi di Milano*, Milano (Italia), *110/110 e lode*  
Relatore: Guido Parravicini.
- 2012–2013 **Interscambio (programma Erasmus)**, *Fisica, KU Leuven*, Leuven (Belgio)
- 2011 **Laurea Triennale in Fisica**, *Università degli Studi di Milano-Bicocca*, Milano (Italia), *110/110 e lode*  
Relatore: Diego Noja.
- 2008 **Diploma**, *Liceo Scientifico Mascheroni*, Bergamo (Italia), *100/100*

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## Pubblicazioni

### Libri:

- 2024 **P. Perrone**, *Starting Category Theory*, World Scientific  
ISBN: 978-981-12-8600-1

### Articoli pubblicati:

- 2026 **T. Fritz, T. Gonda, A. Lorenzin, P. Perrone and A. Shah Mohammed**, *Empirical Measures and Strong Laws of Large Numbers in Categorical Probability*, *Logical Methods in Computer Science*, vol. 22, issue 2
- 2025 **P. Perrone**, *Lifting couplings in Wasserstein spaces*, *Compositionality*, vol. 7, art. 2
- 2024 **P. Perrone**, *Markov Categories and Entropy*, *IEEE Transactions of Information Theory*, vol. 70, issue 3
- 2023 **C. Constantin, T. Fritz, P. Perrone, B. Shapiro**, *Weak cartesian properties of simplicial sets*, *Journal of Homotopy and Related Structures*
- 2023 **T. Fritz, T. Gonda, N. Gauguin Houghton-Larsen, P. Perrone and D. Stein**, *Dilations and information flow axioms in categorical probability*, *Mathematical Structures in Computer Science*
- 2023 **T. Fritz, F. Gadducci, P. Perrone and D. Trotta**, *Weakly Markov categories and weakly affine monads*, *Proceedings of CALCO 10, LIPIcs*

- 2023 **T. Fritz, T. Gonda, P. Perrone and E. F. Rischel**, *Representable Markov Categories and Comparison of Statistical Experiments in Categorical Probability*, Theoretical Computer Science, vol. 961
- 2023 **C. Constantin, T. Fritz, P. Perrone, B. Shapiro**, *Partial evaluations and the compositional structure of the bar construction*, Theory and Application of Categories, vol. 39, n. 11
- 2023 **S. Moss und P. Perrone**, *A category-theoretic proof of the ergodic decomposition theorem*, Ergodic Theory and Dynamical Systems
- 2022 **S. Moss, P. Perrone**, *Probability monads with submonads of deterministic states*, Proceedings of LICS
- 2022 **P. Perrone, W. Tholen**, *Kan extensions are partial colimits*, Applied Categorical Structures, vol. 30
- 2021 **T. Fritz, P. Perrone, S. Rezagholi**, *Probability, valuations, hyperspace: Three monads on Top and the support as a morphism*, Mathematical Structures in Computer Science, vol. 31, n. 8
- 2021 **T. Fritz, T. Gonda, P. Perrone**, *De Finetti's Theorem in Categorical Probability*, Journal of Stochastic Analysis, vol. 2, n. 4, art. 6
- 2020 **T. Fritz, P. Perrone**, *Stochastic order on metric spaces and the ordered Kantorovich monad*, Advances in Mathematics, vol. 366
- 2020 **T. Fritz, P. Perrone**, *Monads, partial evaluations, and rewriting*, Proceedings of MFPS 36, ENTCS
- 2019 **T. Fritz, P. Perrone**, *A Probability Monad as the Colimit of Spaces of Finite Samples*, Theory and Application of Categories, vol. 34, n. 7
- 2018 **T. Fritz, P. Perrone**, *Bimonoidal Structure of Probability Monads*, Proceedings of MFPS 34, ENTCS
- 2016 **P. Perrone, N. Ay**, *Hierarchical Quantification of Synergy in Channels*, Frontiers in Robotics and AI
- Articoli inviati:**
- 2025 **M. Di Meglio, C. Heunen, J-S. P. Lemay, P. Perrone, D. Stein**, *Dagger categories of relations: the equivalence of dilatory dagger categories and epi-regular independence categories*, preprint su arXiv:2508.01146
- 2025 **M. Bohinen and P. Perrone**, *Categorical algebra of conditional probability*, preprint su arXiv:2502.14941
- 2024 **P. Perrone**, *How to Represent Non-Representable Functors*, preprint su arXiv:2410.08019

- 2024 **P. Perrone and R. Van Belle**, *Convergence of martingales via enriched dagger categories*, preprint su arXiv:2404.15191
- 2023 **N. Ensarguet and P. Perrone**, *Categorical probability spaces, ergodic decompositions, and transitions to equilibrium*, preprint su arXiv:2310.04267
- 2023 **T. Fritz, T. Gonda, A. Lorenzin, P. Perrone and D. Stein**, *Absolute continuity, supports and idempotent splitting in categorical probability*, preprint su arXiv:2308.00651

**Tesi di dottorato:**

- 2018 **P. Perrone**, *Categorical Probability and Stochastic Dominance in Metric Spaces*, Università di Lipsia, Germania, disponibile online all'indirizzo [www.paoloperrone.org/phdthesis.pdf](http://www.paoloperrone.org/phdthesis.pdf)

**Appunti, note e altro materiale:**

- 2023 **P. Perrone**, *Categorical Information Geometry*, Proceedings of Geometric Science of Information (GSI 2023), Lecture Notes in Computer Science 14071
- 2019 **P. Perrone**, *Notes on Category Theory with examples from basic mathematics*, appunti di lezioni, arXiv:1912.10642
- 2018 **T. Fritz, P. Perrone**, *A Criterion for Kan Extensions of Lax Monoidal Functors*
- 2016 **P. Perrone, N. Ay**, *Iterative Scaling Algorithm for Channels*
- 2016 **P. Perrone, N. Ay**, *Decomposition of Markov Kernels*, Proceedings of WUPES 10
- 2015 **P. Perrone**, *Dual Connections and Holonomy*

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## Insegnamento e contributi alla comunità scientifica

**Lezioni:**

- 2025 **Docente**, *Applied Category Theory*, corso di laurea magistrale, University of Oxford (U.K.)
- 2025 **Tutor**, *Integral Transforms*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2025 **Tutor**, *Integration*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2024 **Mentore**, *Applied Category Theory*, summer school and e seminari online, University of Oxford (U.K.)

- 2023 **Tutor**, *Integral Transforms*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2023 **Tutor**, *Integration*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Tutor**, *Probability I*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Tutor**, *Probability II*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Tutor**, *Quantum Computing and Modelling: an Applied Category Theory Perspective*, corso pre-universitario, Cambridge Center for International Research (U.K.)
- 2022 **Tutor**, *Integral Transforms*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Tutor**, *Integration*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Tutor**, *Groups and Group Actions*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Tutor**, *Linear Algebra II*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2022 **Docente**, *Teoria delle categorie*, online, in italiano  
In collaborazione con il Progetto ItaCa.
- 2021 **Docente**, *Bayesian Statistical Probabilistic Programming*, corso di laurea magistrale, University of Oxford (U.K.)  
Insieme a Hugo Paquet e Sam Staton.
- 2021 **Tutor**, *Linear Algebra I*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2021 **Docente**, *Applied Category Theory*, corso di laurea magistrale, University of Oxford (U.K.)
- 2021 **Tutor**, *Groups and Group Actions*, corso di laurea triennale, Mansfield College, University of Oxford (U.K.)
- 2020 **Supervisore**, *Categories and gauge theory*, progetto di studio indipendente, Massachusetts Institute of Technology, Cambridge, MA (U.S.A.)
- 2019 **Docente**, *Applied Linear Algebra*, corso di laurea triennale, University of York, Toronto, ON (Canada)

2019 **TA**, *Applied Category Theory*, summer school and e seminari online, University of Oxford (U.K.)

2019 **Docente**, *Category theory and applications*, corso di laurea magistrale, Max Planck Institute, Lipsia (Germania)

#### Supervisione di studenti:

2024 **Tesi magistrale**, *Jón Hákon Garðarsson*, Mathematical Foundations of Computer Science (MFocS), University of Oxford (U.K.)

2024 **Tesi magistrale**, *Mika Bohinen*, Mathematical Foundations of Computer Science (MFocS), University of Oxford (U.K.)

2023 **Tesi magistrale**, *Noé Ensarguet*, Mathematical Foundations of Computer Science (MFocS), University of Oxford (U.K.)

#### Organizzazione e assistenza di eventi:

2023-24 **Organizzatore**, *Oxford Advanced Seminar on Informatic Structures (OASIS)*, seminario di ricerca, University of Oxford (U.K.)

In collaborazione con Sam Staton e Nobuko Yoshida

2024 **Co-organizzatore**, *Applied Category Theory (ACT)*, conferenza, University of Oxford (U.K.)

Organizzatore principale: Sam Staton

2024 **Co-organizzatore**, *Mathematical Foundations of Programming Semantics (MFPS)*, conferenza, University of Oxford (U.K.)

Organizzatore principale: Sam Staton

2023 **Co-organizzatore**, *Compositional Robotics: Mathematics and Tools*, ICRA 2023 Workshop, ExCeL London (U.K.)

(in collaborazione con Andrea Censi, Gioele Zardini et al.)

2022 **Co-organizzatore**, *Compositional Robotics: Mathematics and Tools*, ICRA 2022 Workshop, Philadelphia, PA (U.S.A.)

(in collaborazione con Andrea Censi, Gioele Zardini et al.)

2021 **Co-organizzatore**, *Compositional Robotics: Mathematics and Tools*, ICRA 2021 Workshop, ETH, Zurigo (Svizzera) – Spostato online per via del CoViD-19

(in collaborazione con Andrea Censi, Gioele Zardini et al.)

2020 **Co-organizzatore e assistente tecnico**, *MIT Categories Seminar*, seminario di ricerca e didattico, Massachusetts Institute of Technology, Cambridge, MA (U.S.A.) – Spostato online per via del CoViD-19

(in collaborazione con Brendan Fong e David Spivak)

- 2020 **Organizzatore locale e assistente tecnico**, *Applied Category Theory (ACT)*, conferenza, Massachusetts Institute of Technology, Cambridge, MA (U.S.A.) – Spostata online per via del CoViD-19  
(altri organizzatori locali: Brendan Fong, David Myers e David Spivak)
- 2020 **Organizzatore**, *Applied Category Theory*, summer school e seminari online, Massachusetts Institute of Technology, Cambridge, MA (U.S.A.) – Spostata online per via del CoViD-19  
(in collaborazione con Carmen Constantin ed Eliana Lorch)
- 2020 **Assistente tecnico**, *Categorical Probability and Statistics*, conferenza, University of Ottawa, ON (Canada) – Spostata online per via del CoViD-19  
(organizzata da Tobias Fritz e Rory Lucyshyn-Wright)
- 2015-2018 **Co-organizzatore**, *LikBez seminar, Mathematics*, seminario didattico, Max Planck Institute, Lipsia (Germania)  
(in collaborazione con Rostislav Matveev e Sharwin Rezagholi)

#### Revisioni di articoli:

- 2026 Logic In Computer Science (LICS), conferenza con pubblicazioni
- 2026 Applied Category Theory (ACT), conferenza con pubblicazioni
- 2025 Symposium on Compositional Structures (SYCO), conferenza
- 2024 Theory and Applications of Categories (TAC), rivista scientifica
- 2024 Applied Category Theory (ACT), conferenza con pubblicazioni
- 2024 Logical Methods in Computer Science (LMCS), rivista scientifica
- 2024 Foundations of Software Science and Computation Structures (FoSSaCS), conferenza con pubblicazioni
- 2023 MDPI Entropy, rivista scientifica
- 2023 Compositionality, rivista scientifica
- 2023 Logical Methods in Computer Science (LMCS), rivista scientifica
- 2022 Journal of the London Mathematical Society, rivista scientifica
- 2022 Applied Category Theory (ACT), conferenza con pubblicazioni
- 2022 Theory and Applications of Categories (TAC), rivista scientifica
- 2022 Revisione di tesi magistrale per Macquarie University, Sydney (Australia)
- 2021 Compositionality, rivista scientifica
- 2020 Logic In Computer Science (LICS), conferenza con pubblicazioni
- 2020 Applied Category Theory (ACT), conferenza con pubblicazioni
- 2020 Compositionality, rivista scientifica

2019 Applied Category Theory (ACT), conferenza con pubblicazioni

**Altre attività:**

2020 Ricevuto il Kaufman Teaching Certificate dall'MIT

Attuale Editore della rivista Compositionality

Attuale Editore dell'International Journal of Mathematics

Attuale Membro della COST Action europea CaLISTA – Cartan geometry, Lie, Integrable Systems, quantum group Theories for Applications (CA21109)

Attuale Comitato scientifico di ItaCa, associazione italiana di teorici delle categorie

Attuale Corso online di ItaCa, in italiano, di teoria delle categorie

Attuale Comitato per etica e valori della conferenza "Applied Category Theory"

Attuale (Co-)autore di nLab, wiki di teoria delle categorie

Attuale (Co-)moderatore dello Zulip Category Theory Community Server

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## Collaborazione con l'industria

2022 **Consulenza**, Cavenwell AI, Ottawa (Canada)

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## Ulteriori competenze

### Conoscenze linguistiche:

Italiano madrelingua

Inglese piena padronanza

Tedesco fluente

Spagnolo fluente

### Per le emergenze:

Pronto soccorso certificato nel 2023 da St. John's Ambulance, London (UK)

Pronto soccorso di salute mentale certificato nel 2023 da Sendo e Mental Health First Aid England (UK)

## Interventi a conferenze e su invito

2026:

- Feb. 2026 **Lezione su invito**, *Markov Categories and Entropy*, Compositional Foundations Seminar, University of Warwick (U.K.)
- Feb. 2026 **Talk su invito**, *Independent States Are Orthogonal: a categorical framework to treat probability geometrically*, 11th Workshop on Information Geometry, Quantum Mechanics and Applications, Universidad Autónoma de Madrid (Spagna)

2025:

- Dic. 2025 **ItaCa Live**, *The Higher Structure of Martingales*, Università degli Studi di Milano (Italia)
- Nov. 2025 **Talk su invito**, *Descent in Probability Theory: The First Steps Downward*, Logic, Algebra and Categories Seminar, Università degli Studi di Milano (Italia)
- Ott. 2025 **Geometric Science of Information 2025**, *Independent States Are Orthogonal: a categorical framework to treat probability geometrically*, Saint-Malo (Francia) (Evento online.)
- Ott. 2025 **Talk su invito**, *Descent in Probability Theory: The First Steps Downward*, Topos Institute, Oxford (U.K.)
- Sett. 2025 **Talk su invito**, *Towards probabilistic regular logic*, Southern and Midlands logic Seminar, University College London (U.K.)
- Lug. 2025 **Category Theory 2025**, *Categories of Relations which Compose Independently*, Masaryk University, Brno (Rep. Ceca)
- Giu. 2025 **Talk su invito**, *Categories for Probability Theory*, Logic, Categories and Applications Seminar, Università degli Studi di Bologna (Italia)
- Giu. 2025 **Talk su invito**, *Probability and information theory with Markov categories*, Computer Science colloquium and seminar, University of Hertfordshire, Hatfield (U.K.)
- Giu. 2025 **ACT 2025**, *Empirical distributions and strong laws of large numbers in categorical probability*, University of Florida, Gainesville FL (U.S.A.)  
Relatore: Tobias Fritz (collaborazione).
- Apr. 2025 **SYCO 13**, *Categorical algebra of conditional probability*, University College London (United Kingdom)  
Relatore: Mika Bohinen (collaborazione).

- Mar. 2025 **Talk su invito**, *Markov Categories*, Quantitative Reasoning Workshop, Bellairs Research Institute (Barbados)
- Feb. 2025 **Talk su invito**, *Categorical probability with additional geometry*, 10th Workshop on Information Geometry, Quantum Mechanics and Applications, Universidad Autónoma de Madrid (Spagna)
- Feb. 2025 **Talk su invito**, *Notions of expectations and probability monads*, PUDDLE Seminar, University of Oxford (U.K.)
- Gen. 2025 **Talk su invito**, *A Categorical Theory of Conditional Expectations*, AMS Special Session, Joint Mathematics Meetings, Seattle, WA (U.S.A.)
- 2024:
- Dic. 2024 **ItaCa Live**, *The Formal Theory of Random Variables*, Università degli Studi di Padova (Italia)
- Nov. 2024 **Lezione su invito**, *Markov categories, symmetries, and generative AI*, Applied Category Theory for Engineering Design, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)  
In collaborazione con Rob Cornish. (Evento online.)
- Nov. 2024 **Distinguished lecture**, *Notions of Expectation and Probability Monads*, Peripatetic Seminar on Sheaves and Logic, Universiteit Leiden (Paesi Bassi)
- Giu. 2024 **Category Theory 2024**, *When limits are limits: topological enrichment with and application to probability*, Universidade de Santiago de Compostela (Spagna)
- Giu. 2024 **Keynote talk, Applied Category Theory 2024**, *Convergence of martingales via enriched dagger categories*, University of Oxford (U.K.)  
Relatore: Ruben Van Belle (collaborazione).
- Giu. 2024 **Talk su invito**, *Markov categories, Bayesian inversions, and statistical experiments*, Tweag, Parigi (Francia)
- Mag. 2024 **Talk su invito**, *Markov categories: Towards user-friendly probability theory*, Finance and Stochastics Seminar, Imperial College London (U.K.)
- Mag. 2024 **Talk su invito**, *Conditional expectation for category theorists*, PUDDLE Seminar, University of Oxford (U.K.)
- Mag. 2024 **Lezione su invito**, *Monoidal preorders and enrichment*, Applied Category Theory course, University of Oxford (U.K.)  
(Evento online.)
- Apr. 2024 **Talk su invito**, *Martingales and their convergence, categorically*, Four Decades of Probabilistic Semantics, Bellairs Research Institute (Barbados)

- Gen. 2024 **Talk su invito**, *Higher abstraction for probability and statistics*, Logic, Uncertainty, Computation and Information (LUCI) Lab, Università degli Studi di Milano (Italia)  
(Evento online.)
- [2023:](#)
- Dic. 2023 **ItaCa Live**, *Conditional expectations as split idempotents*, Università degli Studi di Torino (Italia)
- Ott. 2023 **Talk su invito**, *Probability Theory with Markov categories*, Invited talk, University College London (UCL), Londra (U.K.)
- Sett. 2023 **Talk su invito**, *Information Theory with Markov categories*, Geometry of Information Theory workshop, Universidad Carlos III, Madrid (Spagna)
- Ago. 2023 **Geometric Science of Information 2023**, *Categorical information geometry*, Saint-Malo (Francia)
- Ago. 2023 **Applied Category Theory 2023**, *Markov categories and entropy*, University of Maryland, College Park, MD (U.S.A.)
- Ago. 2023 **Applied Category Theory 2023**, *Absolute continuity, supports and idempotent splitting in Markov categories*, University of Maryland, College Park, MD (U.S.A.)  
Relatore: Tomáš Gonda (collaborazione).
- Lug. 2023 **Tutorial per ACT 2023**, *Markov categories: a tutorial*, University of Maryland, College Park, MD (U.S.A.)
- Lug. 2023 **Keynote talk, Category Theory 2023**, *Universal properties in probability theory*, Université Catholique de Louvain, Louvain-la-Neuve (Belgio)
- Giu. 2023 **CALCO 2023**, *Weakly Markov categories and weakly affine monads*, University of Indiana, Bloomington, IN (U.S.A.)  
(Evento online.)
- Mag. 2023 **Talk su invito**, *Probability, Symmetry, and Entropy with Markov Categories*, Computational Statistics and Machine Learning Seminar (OxCSML), University of Oxford (U.K.)
- Mag. 2023 **Talk su invito**, *Categorical probability and information theory*, Q-Math Seminar, Universidad Carlos III, Madrid (Spagna)
- Apr. 2023 **Evento su invito**, *Probabilistic programming: its challenges and opportunities*, Alan Turing Institute, Londra (U.K.)
- Gen. 2023 **Evento su invito**, *Research week on Markov categories*, Universität Innsbruck (Austria)

## 2022:

- Dic. 2022 **SYCO 10**, *Dilations and information flow axioms in categorical probability*, University of Edinburgh (Scozia)  
Relatore: Tomáš Gonda (collaborazione).
- Dic. 2022 **Talk su invito**, *GS-monoidal structures and thunkability in Kleisli categories*, Università di Pisa (Italia)
- Nov. 2022 **Talk su invito**, *Introduction to Markov categories*, Sheaf Talk Seminar, University of Oxford (U.K.)
- Nov. 2022 **Talk su invito**, *When measurable spaces don't have enough points*, Theoretical Computer Science Seminar, University of Birmingham (U.K.)
- Sett. 2022 **SYCO 9**, *Lifting weights: enriched lenses between transport plans*, Università dell'Insubria, Como (Italia)
- Ago. 2022 **Logic in Computer Science (LICS)**, *Probability monads with submonads of deterministic states*, Technion, Haifa (Israele)  
Relatore: Sean Moss (collaborazione).
- Lug. 2022 **Talk su invito**, *When measurable spaces don't have enough points*, Seminário de Teoria das Categorias, Universidade de Coimbra (Portogallo)  
(Evento online.)
- Lug. 2022 **Applied Category Theory 2022**, *A category-theoretic proof of the ergodic decomposition theorem*, University of Strathclyde (Scozia)
- Giu. 2022 **Lezione su invito**, *Introduction to categorical probability*, Applied Category Theory course, University of Oxford (U.K.)  
(Evento online.)

## 2021 (quasi tutti gli eventi hanno avuto luogo online):

- Nov. 2021 **Talk su invito**, *The rise of quantitative category theory*, Topos Colloquium, Topos Institute, Berkeley, CA (U.S.A.)
- Ago. 2021 **Category Theory 2021**, *Kan extensions are partial colimits*, Università degli Studi di Genova (Italia)  
(Evento in presenza.)
- Lug. 2021 **Applied Category Theory 2021**, *De Finetti's theorem in categorical probability*, University of Cambridge (U.K.)  
Relatore: Tobias Fritz (collaborazione).

- Giu. 2021 **Keynote talk, Categories and Companions 2021**, *An invitation to categorical probability and statistics with Markov categories*, Macquarie University, Sydney (Australia)  
Relatore: Tobias Fritz (collaborazione).
- Giu. 2021 **Categories and Companions 2021**, *Compositional structure of partial evaluations*, Macquarie University, Sydney (Australia)  
Relatore: Brandon Shapiro (collaborazione).
- Mag. 2021 **Seminario**, *Weighted limits in metric geometry*, Metric Geometry seminar, Max Planck Institute for Mathematics in the Sciences, Lipsia (Germania)
- Mag. 2021 **Seminario**, *Markov categories: towards a syntax for probability*, Logic and Semantics for Dummies, University of Cambridge (U.K.)
- Mag. 2021 **Talk su invito**, *The law of large numbers in categorical probability*, Topos Colloquium, Topos Institute, Berkeley, CA (U.S.A.)  
Relatore: Tobias Fritz (collaborazione).
- Apr. 2021 **Talk su invito**, *The de Finetti theorem in categorical probability*, Cohomology in algebra, geometry, physics and statistics, Institute of Mathematics, Czech Academy of Sciences (Czech Republic)  
Relatore: Tobias Fritz (collaborazione).
- Mar. 2021 **Talk su invito**, *Categorical probability, Markov categories and the de Finetti theorem*, New York City Category Theory Seminar, CUNY, New York, NY (U.S.A.)  
Relatore: Tobias Fritz (collaborazione).
- Mar. 2021 **Seminario improvvisato**, *Categorical probability, Markov categories and the de Finetti theorem*, New York City Category Theory Seminar, CUNY, New York, NY (U.S.A.)
- Feb. 2021 **Talk su invito**, *Partial evaluations: the results so far*, Seminario de categorías UNAM, Città del Messico (Messico)
- Feb. 2021 **Talk su invito**, *Partial evaluations for monads and 2-monads*, Seminário de Teoria das Categorias, Universidade de Coimbra (Portogallo)
- Feb. 2021 **Talk su invito**, *Kan extensions are partial colimits*, Masaryk University Algebra Seminar, Brno (Rep. Ceca)
- Gen. 2021 **Lezione su invito**, *An introduction to monads*, Applied Compositional Thinking for Engineers, ETH, Zurigo (Svizzera)
- Gen. 2021 **Oxford Quantum Group Workshop**, *Markov categories: randomness and information flow*, University of Oxford (U.K.)

### 2020 (tutti gli eventi hanno avuto luogo online):

- Sett. 2020 **Talk su invito**, *Colimits as algebraic operations*, ItaCa Fest III, ItaCa (Italia)
- Sett. 2020 **Talk su invito**, *Compositional structure of partial evaluations*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)  
Relatore: Brandon Shapiro (collaborazione).
- Lug. 2020 **Applied Category Theory 2020**, *Distribution functors, second-order stochastic dominance and the Blackwell–Sherman–Stein Theorem in Categorical Probability*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)  
Relatore: Tomáš Gonda (collaborazione).
- Lug. 2020 **Tutorial per ACT 2020**, *Monads and Comonads*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)
- Giu. 2020 **Talk su invito**, *Monads, Partial Evaluations, and Rewriting*, POPV Seminar, University of Boston, Boston, MA (U.S.A.)
- Giu. 2020 **Talk su invito**, *Kan extensions are partial colimits*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)
- Giu. 2020 **Workshop Categorical Probability and Statistics**, *Probability monads and stochastic dominance*, University of Ottawa, ON (Canada)
- Giu. 2020 **Tutorial per workshop CPS**, *What is a probability monad?*, University of Ottawa, ON (Canada)
- Giu. 2020 **MFPS 36**, *Monads, Partial Evaluations, and Rewriting*, Université Paris VII, Parigi (Francia)
- Mag. 2020 **Seminario**, *The support as a morphism from probability to possibility*, Tallinn Institute of Technology (TalTech), Tallinn (Estonia)  
Relatore: Sharwin Rezagholi (collaborazione).
- Apr. 2020 **Seminario**, *Stochastic orders and Kantorovich duality*, Metric Geometry seminar, Max Planck Institute for Mathematics in the Sciences, Lipsia (Germania)
- Mar. 2020 **Seminario**, *Composing partial evaluations*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)

### 2019:

- Nov. 2019 **Talk su invito**, *The compositional structure of partial evaluations*, University of Ottawa, ON (Canada)
- Lug. 2019 **Applied Category Theory 2019**, *The support is a morphism of monads*, University of Oxford (U.K.)

- Mag. 2019 **SYCO 4**, *Categorical Probability: Results and Challenges*, Chapman University, CA (U.S.A.)  
Relatore: Tobias Fritz (collaborazione).
- Mar. 2019 **SYCO 3**, *The support is a morphism of monads*, University of Oxford (U.K.)  
Relatore: Sharwin Rezagholi (collaborazione).
- Feb. 2019 **Talk su invito**, *Towards probability theory without measure theory*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)  
Relatore: Tobias Fritz (collaborazione).
- 2018:**
- Ott. 2018 **Talk su invito**, *Monads, Partial Evaluations, and Martingales*, Massachusetts Institute of Technology (MIT), Cambridge, MA (U.S.A.)
- Sett. 2018 **SYCO 1**, *Monads, Partial Evaluations, and Rewriting*, University of Birmingham (U.K.)
- Lug. 2018 **Category Theory 2018**, *On the Operational Meaning of the Bar Construction*, Universidade dos Açores, Ponta Delgada, Azzorre (Portogallo)
- Giu. 2018 **MFPS 34**, *Bimonoidal Structure of Probability Monads*, Dalhousie University, Halifax, NS (Canada)
- Mag.-Giu. 2018 **FMCS 26**, *A Kantorovich Monad for Ordered Spaces*, Mount Allison University, Sackville, NB (Canada)
- 2014–2017:**
- Lug. 2017 **Category Theory 2017**, *The Wasserstein Monad in Categorical Probability*, University of British Columbia, Vancouver, BC (Canada)
- Nov. 2016 **Talk su invito**, *A Conceptual Viewpoint on Information Decomposition*, Perimeter Institute for Theoretical Physics, Waterloo, ON (Canada)
- Sett. 2015 **WUPES 10**, *Decomposition of Markov Kernels*, Moníec (Rep. Ceca)
- Dic. 2014 **GSO 2014**, *Synergy as a Linear Operator*, Albert-Ludwig-Universität, Friburgo (Germania)

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Per ulteriori informazioni o materiale vi prego di contattarmi personalmente.

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