

Silvia De Toffoli

Curriculum Vitae

+39 (324) 6688332
✉ silvia.detoffoli@iusspavia.it
🌐 www.silviadetoffoli.net

Areas of Specialization: Philosophy of Mathematics, Epistemology

Areas of Competence: Philosophy of Science

Academic Appointments

- 2025-pres. **Scuola Superiore Universitaria IUSS Pavia**, *Department of Humanities and Life Sciences, Linguistics and Philosophy Center*, Associate Professor of Philosophy
- 2022-2025 **Scuola Superiore Universitaria IUSS Pavia**, *Department of Humanities and Life Sciences, Linguistics and Philosophy Center*, Assistant Professor of Philosophy
- 2022 **Linköping University**, *Department of Culture and Society*, Assistant Professor of Philosophy and Wallenberg Academy Fellow
- 2019–2022 **Princeton University**, *Philosophy Department*, Postdoctoral Research Associate and Lecturer
- 2013–2014 **Montana State University**, *Department of Mathematical Sciences*, Research Scholar and Lecturer

Academic Affiliations

- 2022-pres. **Technical University of Berlin**, *Institute of History and Philosophy of Science, Technology, and Literature*, Department Affiliate
- 2022-pres. **Sphere Research Unit**, *CNRS, Paris*, Associated Researcher

Education

- 2014–2019 **Ph.D. in Philosophy**, Stanford University
Thesis: *Epistemic Roles of Mathematical Diagrams*, committee: Thomas Ryckman (supervisor), Michael Friedman, Krista Lawlor, Marcus Giaquinto.
Research visits: Columbia University (fall 2016), IHPST – Institute of History and Philosophy of Sciences and Technology, Paris (spring 2017), University of Pennsylvania (fall 2017), Goethe University Frankfurt (spring 2018).
- 2019 **Ph.D. Minor in Philosophy, Literature, and the Arts**, Stanford University
Advisor: R. Lanier Anderson.
- 2016 **M.A. in Philosophy**, GPA: 4/4, Stanford University
- 2009–2013 **Ph.D in Mathematics**, Technical University of Berlin

- Thesis: *Degrees of Essentiality for Secants of Knots*, Supervisor: John Sullivan.
- 2006–2009 **M.Sc. in Mathematics**, *Summa Cum Laude*, University of Bologna
As visiting student: University of Paris7, France (2007-2008).
- 2004–2006 **B.Sc. in Mathematics**, *Summa Cum Laude*, University of Bologna
As visiting student: University of Calgary, Canada (2004-2005).

Publications

Books

- forth **How to Prove Things with Diagrams**, UK: Oxford University Press
- under contract **Fallibilist Epistemology of Mathematics**, *Elements Series*, Cambridge University Press

Articles and Book Chapters

- forth **The Philosophy of Mathematical Practice**, *Stanford Encyclopedia of Philosophy*, (with Paolo Mancosu)
- forth **Mathematical Justification without Proof**, in: *Self Knowledge and Knowledge A Priori*, Ed.s Giacomo Melis, Giovanni Merlo, and Crispin Wright, UK: Oxford University Press
- 2025 **The Epistemic Roles of Diagrams**, in: *Third Edition of the Blackwell Companion to Epistemology*, Ed.s Jonathan Dancy, Ernest Sosa, Matthias Steup, and Sosa Kurt Sylvan, Blackwell, Wiley, 180-183
- 2025 **Visualization and Diagrams in Mathematics**, in: *Routledge Handbook of the History and Philosophy of Science*, Ed.s Flavia Padovani and Adam Tamas Tuboly, Routledge, 431-443
- 2025 **What Mathematical Explanation Need Not Be**, *Journal of Mathematical Behavior*, 79(101255), 1-12, (with Elijah Chudnoff)
- 2024 **PROOFS FOR A PRICE: Tomorrow’s Ultra-Rigorous Mathematical Culture**, *Bulletin of the American Mathematical Society*, 61(3), 395-410
- 2024 **The Epistemological Subject(s) of Mathematics**, in: *The Handbook of the History and Philosophy of Mathematical Practice*, Ed. Bharath Sriraman, Switzerland: Springer, 2879-2904
- 2023 **Recalcitrant Disagreement in Mathematics: An “Endless and Depressing Controversy” in the History of Italian Algebraic Geometry**, *Global Philosophy*, 33:38, 1-29 (with Claudio Fontanari)
- 2023 **Who’s Afraid of Mathematical Diagrams?**, *Philosophers’ Imprint*, 23:1, 1-20
- 2022 **Objectivity and Rigor in Classical Italian Algebraic Geometry**, *Noesis*, No. 38, 195-212 (with Claudio Fontanari)

- 2022 **Intersubjective Propositional Justification**, in: *Propositional and Doxastic Justification: New Essays on Their Nature and Significance*, Eds. Paul Silva Jr. & Luis Oliveira, Routledge, 241-262
- 2022 **What Is Mathematical Rigor?**, *Aphex*, No. 25, 1-17 (with John Burgess)
- 2022 **What Are Mathematical Diagrams?**, *Synthese*, 200:86, 1-29
- 2021 **Groundwork for a Fallibilist Account of Mathematics**, *The Philosophical Quarterly*, Volume 7, Number 4, 823-844
- 2021 **Reconciling Rigor and Intuition**, *Erkenntnis*, Volume 86, 1783-1802
- 2019 **Leopardi: ‘Everything is Evil’**, in: *Evil—A History*, Ed. Andrew Chignell, UK: Oxford University Press, 350-357
- 2017 **‘Chasing’ The Diagram – The Use of Visualizations in Algebraic Reasoning**, *The Review of Symbolic Logic*, Volume 10, Number 1, 158-186
- 2016 **Envisioning Transformations – the Practice of Topology**, in: *Mathematical Cultures*, Ed. Brendan Larvor, Birkhäuser, 25-50, (with Valeria Giardino)
- 2015 **An Inquiry into the Practice of Proving in Low-Dimensional Topology**, in: *From Logic to Practice*, Eds. Gabriele Lolli, Marco Panza, Giorgio Venturi, Boston Studies in the Philosophy and History of Science, Volume 308, 315-336, (with Valeria Giardino)
- 2014 **Forms and Roles of Diagrams in Knot Theory**, *Erkenntnis*, Volume 79, 829-842, (with Valeria Giardino)

Editorial Work

- forth **Mathematics Education meets the Philosophy of Mathematical Practice**, *Special issue of The Journal of Mathematical Behavior*, with a co-authored introduction (with Yacin Hamami, Matthew Inglis, and Juan Pablo Mejía Ramos)
- 2018 **Tools of Reason: The Practice of Scientific Diagramming from Antiquity to the Present**, *Special issue of Endeavour*, with a co-authored introduction, Volume 42 (2-3), 49–59, (with Paula Findlen and Greg Priest)

Conference Proceedings

- 2018 **Fruitful Over-Determination in Knot Diagrams**, *Proceeding of Diagrams 2018, Lecture Notes in Computer Science*, 10871 LNAI, 807–809
- 2012 **Meta-Vermeer: A Topological Reinterpretation of a Masterpiece**, *Proceeding of Bridges 2012: Mathematics, Music, Art, Architecture, Culture*, 499-502, (with Yasuhiro Sakamoto)

Outreach

- 2026 **Filosofia della pratica matematica: una panoramica**, *Nuova Lettera Matematica*, Vol. 10, 36-46
- 2025 **Conversation with Helen Longino**, *Aphex*, No. 35

- 2022 **Le certezze irraggiungibili della matematica** (“**The Unreacheable Certainties of Mathematics**”), *Archimede, La rivista per gli insegnanti e i cultori di matematiche pure e applicate*, No. 2, 60-66
- 2022 **Conversation with John P. Burgess**, *Aphex*, No. 25
- 2022 **I nodi dell’intelligenza artificiale** (“**The Knots of Artificial Intelligence**”), *Maddmaths! – Matematica Divulgazione Didattica*, 2 gennaio 2022
- 2017 **Numeri. Divagazioni, calcoli, giochi** (“**Numbers. Digressions, calculations, games**”), 2nd Edition, preface by Furio Honsell, (with Dario De Toffoli and Dario Zaccariotto), Edizioni Koala (1st Edition, 2008, Stampa Alternativa, Viterbo, introduction by Stefano Bartezzaghi)

Interviews

- 2022 **Anche la matematica è un’attività umana – intervista a Silvia De Toffoli**, *Il Tascabile*, intervista di Andrea Zanni, Jan. 3, 2022
- 2021 **Filosofia pratica della matematica, istruzioni per l’uso – intervista a Silvia De Toffoli**, *Maddmaths! – Matematica Divulgazione Didattica*, di Roberto Natalini, June 6, 2021

Grants & Awards

- July 2025 **Erasmus +**, *Technical University of Berlin*, (4,894€)
- 2025-2027 **FIS 2**, *IUSS Pavia*, (1,660,388€), Humanizing Mathematical Knowledge: Fallibility, Technology
- 2023-2025 **PRIN PNRR 2022**, *IUSS Pavia*, (239,238€), Scientific Disagreement and Its Impact on Society (co-PI with Filippo Ferrari)
- July 2024 **Erasmus +**, *Technical University of Berlin*, (3,590€)
- 2021 **Wallenberg Academy Fellowship**, *Linköping University, Swenden*, (> 1,000,000€)
- 2017-2019 **Ric Weiland Graduate Fellow in the Humanities & Sciences**, *Stanford University*
- 2017 **France-Stanford Visiting Student Researcher Fellowship**, *IHPST, Institute of History and Philosophy of Sciences and Technology, Paris*
- 2014-2019 **PhD scholarship**, *Stanford University*
- 2013 **Certificate of Distinction from the Berlin Mathematical School**, *for the Ph.D. thesis Degrees of essentiality for secants of knots*
- 2009-2013 **PhD scholarship**, *Berlin Mathematical School*

Teaching

Scuola Universitaria Superiore IUSS Pavia

Social Epistemology of Mathematics, *San Raffaele University*, PhD class, spring 2026

Philosophy of Mathematics, *HuME PhD Program*, graduate seminar (with Mario Piazza and Andrea Sereni), spring 2023, spring 2024, spring 2025, spring 2026

Philosophy of Mathematics: Epistemology and Practice, Module of a Master course in Philosophy, spring 2024, spring 2025, spring 2026

Social Epistemology, Module of a Master course in Psychology, fall 2022, fall 2023, fall 2024

Visualizzazione, dimostrazioni e rigore: temi di filosofia della pratica matematica, upper division undergraduate class, fall 2022, fall 2023, spring 2025, spring 2026

Princeton University

2021-2022 **Mathematical Rigor Between Theory and Practice**, graduate seminar (with John Burgess)

2020-2021 **Theory of Knowledge**, upper division undergraduate class

2019-2020 **Philosophy of Mathematics**, upper division undergraduate class (with John Burgess)

Stanford University

2017-2018 **Philosophy of Mathematics**, upper division undergraduate class

2016-2017 **Philosophy and Literature**, undergraduate class (TA, Instructors: R. Lanier Anderson and Josh Landy)

2015-2016 **Epistemology**, undergraduate class (TA, Instructor: Eli Alshanetsky)

2015-2016 **Introduction to Philosophy of Science**, undergraduate class (TA, Instructor: Helen Longino)

Other Universities

2016-2017 **Introduction to Philosophy**, *City College New York*, undergraduate class

2013-2014 **Algebraic Topology**, *Montana State University*, graduate seminar

2010-2011 **Topology**, *Technical University of Berlin*, Master class (TA, Instructor: John Sullivan)

Events Organization

Main Organizer

June 2026 **Triennial Conference of the Italian Society for Logic and Philosophy of Science**, *IUSS Pavia*

June 2026 **Workshop on Coliva's *Social and Applied Hinge Epistemology***, *IUSS Pavia*

Nov. 2026 **Workshop: Philosophy of Mathematical Practice Meets Mathematical Education**, *IUSS Pavia*

- June 2025 **Workshop: Inference in Pavia**, *IUSS Pavia*, (with Eli Chudnoff)
- Aug. 2024 **Symposium of the Association for the Philosophy of Mathematical Practice**, in: *XXV World Congress of Philosophy*, Rome
- June 2024 **Conference: International Conference of the Association for the Philosophy of Mathematical Practice (APMP)**, *Conference at IUSS Pavia*, (with Ludovica Conti, Daniele Molinini, Andrea Sereni, and Luca Zanetti)
- May 2024 **Workshop: Disagreement in the Exact Sciences**, *IUSS Pavia*, (with Andrea Sereni, Guido Tana, and Luca Zanetti)
- May 2023 **Conference: Philosophies of Mathematics in Dialogue**, *Conference at Princeton University*, (with John Burgess)
- 2023-pres. **Organizer of the IUSS Philosophy Seminars: Epistemology and Mathematics Series**, *IUSS Pavia*, (with Andrea Sereni and Luca Zanetti)
- April 2021 **Society Session of the Philosophy of Mathematics Association: Rigor and Intuition**, *Pacific APA*, Online, Portland
- April 2020 [**CANCELED**] **Conference: The ‘End’ of Philosophy of Mathematics?**, *Conference at Princeton University*, (with John Burgess)
- Aug. 2019 **Symposium of the Association for the Philosophy of Mathematical Practice**, in: *16th Congress of Logic, Methodology and Philosophy of Science and Technology*, Prague, (with Andrew Arana)
- Aug. 2018 **Symposium of the Association for the Philosophy of Mathematical Practice**, in: *XXIV World Congress of Philosophy*, Beijing
- Feb. 2018 **Workshop: Mathematical Reasoning**, *Stanford University*, (with Rebecca Morris)
- Oct. 2017 **Workshop: Varieties of Visualization in Mathematics**, in: *4th International Meeting of the Association for the Philosophy of Mathematical Practice*, Salvador, Brazil
- Feb. 2017 **Conference: Tools of Reason: The Practice of Scientific Diagramming from Antiquity to the Present**, *Stanford University*, (with Paula Findlen and Greg Priest)

Member of Scientific or Organizing Committee

- Aug. 2026 **14th International Conference on the Theory and Application of Diagrams**, *Tallin*, Workshop Chair
- Jan. 2026 **8th International Conference of the Association for the Philosophy of Mathematical Practice**, *ETH, Zurich*, Co-chair (with Paolo Mancosu) of the Scientific Committee
- Oct. 2024 **13th International Conference on the Theory and Application of Diagrams**, *Münster*, Workshop Chair
- Aug. 2024 **XXV World Congress of Philosophy**, *Rome*, Philosophy of Mathematics Program Chair
- Aug. 2023 **ECAP11 – 11th European Congress of Analytic Philosophy**, *Vienna*, Member of the Program Committee

- June 2023 **Bounded Rationality, Imperfect Data, and Trust: Perspectives from Social and Formal Epistemology**, *IUSS Pavia*, Member of the Organizing Committee
- Sept. 2022 **13th International Conference on the Theory and Application of Diagrams**, *Rome*, Member of the Scientific Committee of the Philosophy Track
- Sept. 2021 **12th International Conference on the Theory and Application of Diagrams**, *Online*, Member of the Scientific Committee of the Philosophy Track
- July 2021 **6th International Conference of the Association for the Philosophy of Mathematical Practice**, *Online, Chapman University*, Member of the Organizing Committee
- Aug. 2020 **11th International Conference on the Theory and Application of Diagrams**, *Tallinn*, Member of the Scientific Committee of the Philosophy Track
- Jan. 2020 **5th International Conference of the Association for the Philosophy of Mathematical Practice**, *ETH, Zurich*, Member of the Organizing Committee
- June 2018 **10th International Conference on the Theory and Application of Diagrams**, *Edinburgh*, Member of the Scientific Committee of the Philosophy Track

Service to the Discipline

- 2026-pres. **President**, *Association for the Philosophy of Mathematical Practice (APMP)*
- 2024-pres. **Founding Member**, *MaddMaths! Matematica Divulgazione Didattica*
- 2024-pres. **Member of the Directive Committee**, *Italian Society for Logic and Philosophy of Science (SILFS)*
- 2023-pres. **Member of the Directive Committee**, *European Society for the Philosophy of Mathematics (ESPM)*
- 2023-pres. **Fellow**, *Diversity of Mathematical Research Cultures and Practices (DMRCP)*
- 2023-2024 **Representative of researchers**, *IUSS Pavia*
- 2018-pres. **Member of the Directive Committee**, *Association for the Philosophy of Mathematical Practice (APMP)*

Editorial Service

- 2023-pres. **Member of the Editorial Board, Epistemology**, *Argumenta - Journal of the Italian Society for Analytic Philosophy (SIFA)*
- 2023-pres. **Managing Editor**, *Journal for the Philosophy of Mathematics (JPM)*
- 2022-2023 **Member of the International Advisory Board**, *Phenomenology & Mind*
- 2021-2026 **Assistant Editor of APhEx**, (*Analytical and Philosophical Explanations*) – *Italian journal for analytic philosophy, Open Problems* section

2019-pres. **PhilPapers Editor**, Categories: “Mathematical Practice,” “Visualization in Mathematics,” “Philosophy of Literature,” “Fiction,” “The Basing Relation,” “Propositional and Doxastic Justification,” and “Epistemic Fallibilism.”

Refereeing

Journals

Argumenta, *Australasian Journal of Philosophy*, *Axiomathes*, *The British Journal for the Philosophy of Science*, *Centaurus - Journal of the European Society for the History of Science*, *Dialectica*, *Episteme*, *Erkenntnis*, *European Journal for Philosophy of Science*, *Hopos*, *Hypatia*, *Journal for General Philosophy of Science*, *Journal of Humanistic Mathematics*, *Journal of Mathematical Behavior*, *Kriterion*, *Manuscrito*, *Mind*, *Minds and Machines*, *Philosophia Mathematica*, *The Philosophical Quarterly*, *Philosophical Psychology*, *Philosophical Studies*, *Philosophical Review*, *Philosophy of Science*, *Review of Analytic Philosophy*, *Spatial Cognition and Computation: An Interdisciplinary Journal*, *Synthese*, *Theoria*, *Theoria. An International Journal for Theory, History and Foundations of Science*, *Topoi*.

Books

Cambridge University Press, Oxford University Press, Princeton University Press, Springer, Éditions de la Sorbonne.

Grants

FWF-Austrian Science Fund, Graduate Women in Science (GWIS) National Fellowship Program, Fondecyt Program National Research and Development Agency (Chile).

Languages

Italian: native.

English: excellent (reading, writing, and speaking).

German and French: fluent (reading, writing, and speaking).