



Paolo Bartesaghi

Curriculum Vitae

Education

- 2017–2020 **PhD in Statistics and Mathematical Finance**, *Università degli Studi di Milano - Bicocca*, Milano, Italy, Network Theory.
- 2006–2009 **Master in Applied Mathematics and Modern Physics**, *Università di Udine*, Udine, Italy, Quantum Physics.
- 2003–2005 **Theological Faculty of Northern Italy**, Milano, Italy, Theology.
- 2000–2002 **Scuola di Specializzazione**, *Università degli Studi di Milano*, Milano, Italy, Mathematics and Physics.
- 1993–2000 **Laurea in Fisica**, *Università degli Studi dell'Insubria*, Como, Italy, Theoretical Physics, Quantum Field Theory; Grade: 110/110 cum Laude.
- 1988–1993 **Liceo Scientifico**, *Collegio Arcivescovile Ballerini, Seregno*, Grade: 60/60.

PhD Thesis

- Title *Community detection, risk exposure and multi-layer structure in economic and financial complex networks*
- Supervisor Prof.ssa Rosanna Grassi
- Date defended on February 4th, 2021
- Description Network Theory, Complex Systems, Financial and Economic Systems

Master Thesis

- Title *Dirac fields and thermal effects in the de Sitter universe*
- Supervisor Prof. Ugo Moschella
- Date defended on March 24th, 2000
- Description Quantum Field Theory, Relativity, Gravity

Experience

- 2021–Now **Research Fellow**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, DEPARTMENT OF STATISTICS AND QUANTITATIVE METHODS, Milano.
Network Theory, Complex Systems, Financial and Economic Systems

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- 2021–Now **Teacher**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, DEPARTMENT OF STATISTICS AND QUANTITATIVE METHODS, Milano.
Course of Financial Mathematics, Department of Economics and Business Administration
- 2015–Now **Teaching Assistant**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, DEPARTMENT OF STATISTICS AND QUANTITATIVE METHODS, Milano.
Course of Mathematical Methods of Economics, Finance and Actuarial Sciences
- 2000–2020 **Teacher**, FONDAZIONE SACRO CUORE - MILANO AND MINISTERO DELL'ISTRUZIONE, DELL'UNIVERSITÀ E DELLA RICERCA.
Mathematics and Physics Teacher in High School
- 2012–2016 **Translator and reviewer**, CASA EDITRICE IL SAGGIATORE - MILANO.
Translator and reviewer of scientific essays
- 2015–2020 **Tutor**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA.
Tutor for mathematics courses at Department of Economics and Business
- 2002–2009 **Tutor**, UNIVERSITÀ DEGLI STUDI DI MILANO.
Tutor for mathematics pre-courses at Department of Medicine and Surgery
- 2004–2006 **Tutor**, UNIVERSITÀ DEGLI STUDI DI MILANO.
Tutor for the Laboratory Progetto Scuola Aperta at the Department of Physics

Publications on International Journals

- 2021 P. Bartesaghi, G. P. Clemente and R. Grassi, *Clustering Coefficients in Weighted Undirected Multilayer Networks*, submitted to European Journal of Operational Research on May 27th, 2021
- 2021 P. Bartesaghi and E. Estrada, *Where to cut to delay a pandemic with minimum disruption? Mathematical analysis based on the SIS model*, accepted for publication on Mathematical Models and Methods in Applied Sciences on July 16th, 2021
- 2021 P. Bartesaghi, S. Benati, G. P. Clemente and R. Grassi, *Multi-Attribute Community Detection in International Trade Network*, Networks and Spatial Economics, 1572-9427, <https://doi.org/10.1007/s11067-021-09547-4>
- 2020 P. Bartesaghi, G. P. Clemente and R. Grassi, *Community structure in the World Trade Network based on communicability distances*, Journal of Economic Interaction and Coordination (2020) <https://doi.org/10.1007/s11403-020-00309-y>
- 2020 P. Bartesaghi, M. Benzi, G. P. Clemente, R. Grassi and E. Estrada, *Risk-dependent centrality in economic and financial networks*, SIAM Journal on Financial Mathematics 11 (2), 526-565, <https://doi.org/10.1137/19M1302041>
- 2001 P. Bartesaghi, J. P. Gazeau, U. Moschella and M.V. Takook, *Dirac fields and thermal effects in the de Sitter universe*, Classical and Quantum Gravity 18 (2001) 4373-4394 <http://dx.doi.org/10.1088/0264-9381/18/21/302>

Book Translations

- 2016 Time Travel and Warp Drives di Allen Everett and Thomas Roman, with italian title: Come viaggeremo nel tempo: una guida scientifica alle scorciatoie del nostro universo – Il Saggiatore

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- 2015 Enlightening Symbols by Joseph Mazur, with italian title: Breve Storia dei Simboli Matematici – Il Saggiatore
- 2014 The Computer & The Brain by John von Neumann, with italian title: Computer e cervello – Il Saggiatore
- 2013 Massive by Ian Sample, with italian title: Higgs e il suo bosone – La caccia alla particella di Dio – Il Saggiatore

Talks

- 2019 **Multi-attribute community detection in International Trade Network**, AMASES CONFERENCE, Perugia, September 10th, 2019.
- 2019 **Risk-Dependent Centrality in Economic and Financial Networks**, UNIVERSITÀ DI MILANO – BICOCCA, Milano, December 11th, 2019.

Workshops and Schools

- 2019 **Workshop: Amases Conference 43rd Annual Meeting of the AMASES Association for Mathematics Applied to Social and Economic Sciences**, UNIVERSITÀ DEGLI STUDI DI PERUGIA, Perugia, September 9th-11th, 2019.
- 2019 **Workshop: Wehia Conference - Workshop on Economic Science with Heterogeneous Interacting Agents - The 24th Annual Workshop on Economic Science with Heterogeneous Interacting Agents (WEHIA)**, LONDON CITY UNIVERSITY, London, June 24th-26th, 2019.
- 2019 **Summer School: Como Lake School Workshop on Networks: Complex networks: theory, methods, and applications (5th edition)**, LAKE COMO SCHOOL FOR ADVANCED STUDIES AT VILLA DEL GRUMELLO, Como, July 13th-17th, 2019.
- 2019 **Course: Complessità nei sistemi e nelle reti - prof. Carlo Piccardi**, POLITECNICO DI MILANO, Milano, November 3rd, 2018 - March 6th, 2019.
- 2019 **Course: Introduction to statistics with R: data description and basic inference**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, Milano, January 7th- February 7th, 2019.
- 2018 **Summer School: Complexity and Emergence; Idea, Methods and Applications with special attention to Economics and Finance**, LAKE COMO SCHOOL FOR ADVANCED STUDIES AT VILLA DEL GRUMELLO, Como, July 22nd-27th, 2018.
- 2018 **Vaporizing and Freezing the Riemann Zeta Function - prof. Terence Tao (University of California, Los Angeles)**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, Milano, June 22nd, 2018.
- 2018 **Mathematical Finance - prof.ssa Laura Ballotta (Cass Business School, City University of London)**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, Milano, June 5th and 6th, 2018.
- 2018 **Cascade Sensitivity Measures - prof.ssa Silvana Pesenti (Cass Business School, City University of London)**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, Milano, April 23rd, 2018.

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- 2018 **Robust Statistics: Foundations and Recent Developments** - prof. **Anthony Atkinson (The London School of Economics and Political Sciences)**, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, Milano, April 9th and 10th, 2018.
- 2004 **GIREP 2004 - International Conference on Teaching and Learning Physics in New Contexts**, UNIVERSITY OF OSTRAVA, Ostrava (CZ), July 19th - 23rd, 2004.

Scientific Society Affiliations

- 2019-now **AMASES**, *Associazione per la Matematica Applicata alle Scienze Economiche e Sociali*.
- 2020-now **SICC**, *Società Italiana di Caos e Complessità*.

Administrative Experience

- 2019 **Member of the Organization Committee of NET2019**, *Workshop on Network Models in Statistics, Economics and Social Sciences*, UNIVERSITÀ DEGLI STUDI DI MILANO - BICOCCA, DEPARTMENT OF STATISTICS AND QUANTITATIVE METHODS, AND UNIVERSITÀ CATTOLICA DEL SACRO CUORE, Milano, November 14th and 15th, 2019.

Awards and Grants

- 2005 **Winner of the FAST Contest 2008**, *Spiderweb – Osservazioni sulle proprietà ottimali delle ragnatele*, Expo Science – ESE 2008, Budapest, July 14th-20th, 2008.
- 2005 **Winner of the FAST Contest 2005**, *La musica e la matematica - Rapporti aurei e consonanza degli accordi musicali in tonalità minore*, International Award Mu Alpha Theta, Milano, 2005.
- 2004 **Winner of the CERN Competition 2004**, *Alpha Natural Radioactivity in the Air: an Experiment for High-School Students*, Genève, 2004.

Informative Papers

- 2003 P. Bartesaghi, *Un astronauta a scuola*, Emmeciquadro - Scienza, Educazione e Didattica 17 (2003) 77-82
- 2004 P. Bartesaghi, *La teoria fisica e il concetto di modello*, Nuova Secondaria 8 (April 2004) 83-94
- 2004 P. Bartesaghi, F. Camera, L. Cazzaniga, M. Costigliolo, M. Giliberti, I. Labanca, *Alpha Natural Radioactivity in the Air: an Experiment for High-School Students*. CERN Competition 2003 - Proceedings for Girep Conference 2004
- 2005 P. Bartesaghi, M. Borello, A. Motta, D. Rotta, *L'accordo di minore: struttura matematica dell'accordo e analisi della distribuzione tonotopica delle frequenze sulla spirale cocleare*, Emmeciquadro - Scienza, Educazione e Didattica 24 (2005) 105-114
- 2007 P. Bartesaghi. *La musica e la matematica - Rapporti aurei e consonanza degli accordi musicali in tonalità minore*. Nuova Secondaria 8 (April 2007) 49-54

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Computer skills

Basic	JAVA, C
Intermediate	Matlab, HTML, Linux, Adobe Photoshop, Derive, Cabri-Géometre, Maple
Advanced	R, L ^A T _E X, Office

Languages

Italian	Mothertongue
English	Excellent <i>Fluent, written and spoken (Level B2, First Certificate in English in 2014)</i>
German	Basic <i>Basic words and phrases only</i>

Interests

- Piano
- Hiking
- Painting
- Writing

Further information

- 2009 Recognition of the Italian Qualification for secondary education by the Swiss Conference of Cantonal Ministers of Education (2009-present)
- 2007 Mention at International Competition of Poetry and Narrative - Città di Salò 2007
- 2008 Mention at National Prize of Poetry and Narrative Albero Andronico - Rome 2008
- 2019 Personal exhibition of oil paintings at Villa Silva in Seregno (Italy), March 16th-23rd, 2019

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