

Gianluca Brero

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Research Fields

Mechanism Design, Market Design, Combinatorial Auctions, Artificial Intelligence, Machine Learning

Education

- Since 2014 **Ph.D. Student**, *Faculty of Business, Economics, and Informatics*, University of Zurich.
- Computation and Economics Research Group, Advisor: Prof. Sven Seuken
- 2011–2014 **M.Sc. in Mathematical Engineering**, *Turin Polytechnic*.
- M.Sc. Thesis: *Local Coordination and Global Congestion Network Dynamics*
Topics: Games on Networks, Evolutionary Dynamics
 - GPA: 4.0 (summa cum laude)
- 2011–2013 **Alta Scuola Politecnica (ASP) Diploma**, *Milan Polytechnic and Turin Polytechnic*.
- Educational joint venture of Turin and Milan Polytechnic with a focus on multi-disciplinarity and innovation. Entry limited to the top 5% M.Sc. students of the two universities.
- 2008–2011 **B.Sc. Mathematics for Engineering**, *Turin Polytechnic*.
- B.Sc. Thesis: *The Brachistochrone Problem: Origins and Solutions*
Topic: Calculus of Variations
 - GPA: 4.03 (summa cum laude)
- 2003–2008 **Diploma di Maturità Classica**, *Liceo Arimondi*, Savigliano.

Research Experience

- 2016 **Intern at Microsoft Research**, New York City.
- Mentor: Sébastien Lahaie
 - Project: *Bayesian Methods for Market Clearing*
Topics: Market Design, Bayesian Learning

Research Contributions

Publications (peer-reviewed)

- **Fast Iterative Combinatorial Auctions via Bayesian Learning.** Gianluca Brero, Sébastien Lahaie, and Sven Seuken. In *Proceedings of the Thirty-third AAAI Conference of Artificial Intelligence (AAAI-19)*, Honolulu, USA, January 2019.
- **Combinatorial Auctions via Machine Learning-based Preference Elicitation.** Gianluca Brero, Benjamin Lubin, and Sven Seuken. In *Proceedings of the Twenty-seventh International Joint Conference on Artificial Intelligence and the Twenty-third European Conference on Artificial Intelligence (IJCAI-ECAI-18)*, Stockholm, Sweden, July 2018.

- **A Bayesian Clearing Mechanism for Combinatorial Auctions.** Gianluca Brero and Sébastien Lahaie. In *Proceedings of the Thirty-second AAAI Conference of Artificial Intelligence (AAAI-18)*, New Orleans, USA, February 2018.
- **Probably Approximately Efficient Combinatorial Auctions via Machine Learning.** Gianluca Brero, Benjamin Lubin, and Sven Seuken. In *Proceedings of the Thirty-first AAAI Conference of Artificial Intelligence (AAAI-17)*, San Francisco, USA, February 2017.
- **Dynamics in Network Games with Local Coordination and Global Congestion Effects.** Gianluca Brero, Giacomo Como, and Fabio Fagnani. In *Proceedings of the Fifty-third IEEE Conference on Decision and Control (CDC-14)*, Los Angeles, USA, December 2014.
- **HaptiChem: Haptic and Visual Support in Interactions with the Microscopic World.** Elisa Magnanelli, Gianluca Brero, Rosa Virginia Espinoza Garnier, Giacomo Mazzeletti, Alessandro Maria Rizzi, and Sara Comai. In *Learning and Collaboration Technologies. Technology-Rich Environments for Learning and Collaboration*, Springer International Publishing, 2014.

Working Papers

- **Machine Learning-powered Iterative Combinatorial Auctions.** Gianluca Brero, Benjamin Lubin, and Sven Seuken.

Invited Talks

- **Combinatorial Auctions via Machine Learning-based Preference Elicitation.** At *2018 INFORMS Annual Meeting*, Phoenix, USA, November 2018.
- **Design of Combinatorial Auctions Using Machine Learning-based Bidding.** At *2016 INFORMS Annual Meeting*, Nashville, USA, November 2016.

Teaching Experience (at University of Zurich)

- 2019 Teaching Assistant, Continuing Education Course (1-day courses for professionals): *Market Design and Machine Learning*
- 2018 Teaching Assistant, Continuing Education Course (1-day courses for professionals): *Market Design and Machine Learning*
- 2017 Teaching Assistant, Lecture: *Economics and Computation*
- 2016 Teaching Assistant, Lecture: *Economics and Computation*
- 2014 Teaching Assistant, Lecture: *Economics and Computation*

Mentoring Experience (at University of Zurich)

- Manuel Beyeler, 04/2019 - 09/2019 (expected)
- Nicolas Kuechler, 04/2017 - 09/2017
- Andreas Perschak, 05/2015 - 11/2015

Honors and Awards

- 2015 Honored by Municipality of Savigliano (hometown) for outstanding curriculum studies.
- 2015 Awarded the Vallauri Prize as the top student in Mathematical Engineering at Turin Polytechnic graduated in 2014.
- 2012 Awarded the Club Optime Prize issued by Turin Industrial Association.

- 2012 Awarded the Erasmus University scholarship at Queen Mary University of London.
- 2011 Awarded the Marco Polo scholarship issued by Cassa di Risparmio di Torino.

Personal Information

Languages

- Italian (native)
- English (fluent)
- Spanish (conversational)

Interests

- Improvisation Theatre (former member of ImproTeatro)
- Guitar (former student at Musical Institute G. Fergusio, Savigliano)

References

- Prof. Dr. Sven Seuken (Ph.D. Advisor)
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- Prof. Dr. Benjamin Lubin (Ph.D. Co-advisor)
Center for Information & System Engineering
Boston University
✉ blubin@bu.edu
- Dr. Sébastien Lahaie (Mentor at Microsoft Research)
Research Scientist
Google Research
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