

Andrea Celli

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Research interests

Fields: artificial intelligence, game theory, optimization

Specific: equilibrium computation, online learning, multi-agent learning, auctions, market design

Employment

Postdoctoral researcher

Facebook Core Data Science (London)

June 2020–Present

Postdoctoral researcher

Politecnico di Milano

November 2019–May 2020

Education

Politecnico di Milano

PhD in Computer Science

Milan

2016–February 2020

Carnegie Mellon University

Visiting Scholar

Pittsburgh

Jan 2018–May 2018

Politecnico di Milano

MSc in Computer Science and Engineering, Grade: 110 cum laude/110

Milan

2014–2016

Politecnico di Milano

BSc in Computer Science and Engineering, Grade: 110 cum laude/110

Milan

2011–2014

Publications

Conference Papers

- [C1] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Signaling in bayesian network congestion games: The subtle power of symmetry,” in *AAAI (accepted for publication)*, 2021.
- [C2] F. Cacciamani, **A. Celli**, M. Ciccone, N. Gatti, “Multi-agent coordination in adversarial environments through signal mediated strategies,” in *AAMAS (accepted for publication)*, 2021.
- [C3] **A. Celli**, A. Marchesi, G. Farina, N. Gatti, “No-regret learning dynamics for extensive-form correlated equilibrium,” in *NeurIPS (Oral presentation and best paper award)*, 2020.
- [C4] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Online bayesian persuasion,” in *NeurIPS (Spotlight presentation)*, 2020.
- [C5] **A. Celli**, S. Coniglio, N. Gatti, “Bayesian persuasion with sequential games,” in *AAAI*, 2020.
- [C6] M. Castiglioni, **A. Celli**, N. Gatti, “Persuading voters: It’s easy to whisper, it’s hard to speak loud,” in *AAAI*, 2020.
- [C7] **A. Celli**, A. Marchesi, T. Bianchi, N. Gatti, “Learning to correlate in multi-player general-sum sequential games,” in *NeurIPS*, 2019.
- [C8] **A. Celli**, S. Coniglio, N. Gatti, “Computing optimal ex ante correlated equilibria in two-player sequential games,” in *AAMAS*, 2019.
- [C9] **A. Celli**, G. Romano, N. Gatti, “Personality-based representations of imperfect-recall games,” in *AAMAS (Extended Abstract)*, 2019.

- [C10] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Ex ante coordination and collusion in zero-sum multi-player extensive-form games,” in *NeurIPS*, 2018.
- [C11] **A. Celli** and N. Gatti, “Computational results for extensive-form adversarial team games,” in *AAAI*, 2018.
- [C12] **A. Celli**, A. Marchesi, N. Gatti, “On the complexity of nash equilibrium reoptimization,” in *UAI*, 2017.
- [C13] N. Basilico, **A. Celli**, G. De Nittis, N. Gatti, “Team-maxmin equilibrium: Efficiency bounds and algorithms,” in *AAAI*, 2017.
- [C14] N. Basilico, **A. Celli**, G. D. Nittis, N. Gatti, “Coordinating multiple defensive resources in patrolling games with alarm systems,” in *AAMAS*, 2017.

Journal Papers.....

- [J1] M. Castiglioni, **A. Celli**, N. Gatti, “Public bayesian persuasion: Being almost optimal and almost persuasive,” *Under review*, 2021.
- [J2] **A. Celli** and A. Marchesi, “Learning dynamics in limited-control repeated games,” *Intelligenza Artificiale*, 2018.
- [J3] N. Basilico, **A. Celli**, G. D. Nittis, N. Gatti, “Computing the team–maxmin equilibrium in single–team single–adversary team games,” *Intelligenza Artificiale*, 2017.

Workshop Papers.....

- [W1] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Faster algorithms for optimal ex-ante coordinated collusive strategies in extensive-form zero-sum games,” in *AAAI, Workshop on Reinforcement Learning in Games*, 2021.
- [W2] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Online bayesian persuasion,” in *AAAI, Workshop on Reinforcement Learning in Games*, 2021.
- [W3] **A. Celli**, A. Marchesi, G. Farina, N. Gatti, “No-regret learning dynamics for extensive-form correlated equilibrium,” in *AAAI, Workshop on Reinforcement Learning in Games*, 2021.
- [W4] —, “No-regret learning dynamics for extensive-form correlated equilibrium,” in *NeurIPS, Cooperative AI Workshop*, 2020.
- [W5] F. Cacciamani, **A. Celli**, M. Ciccone, N. Gatti, “Multi-agent coordination through signal mediated strategies,” in *NeurIPS, Cooperative AI Workshop*, 2020.
- [W6] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Faster algorithms for optimal ex-ante coordinated collusive strategies in extensive-form zero-sum games,” in *NeurIPS, Cooperative AI Workshop*, 2020.
- [W7] **A. Celli**, A. Marchesi, T. Bianchi, N. Gatti, “Learning to correlate in multi-player general-sum sequential games,” in *NeurIPS, Smooth Games Optimization and Machine Learning Workshop*, 2019.
- [W8] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Ex ante coordination in team games,” in *AAAI, Workshop on Reinforcement Learning in Games*, 2019.
- [W9] **A. Celli** and A. Marchesi, “Nash equilibrium reoptimization is hard,” in *IJCAI, Algorithmic Game Theory Workshop*, 2017.
- [W10] N. Basilico, **A. Celli**, G. D. Nittis, N. Gatti, “Coordinating multiple defensive resources in patrolling games with alarm systems,” in *AAMAS, Workshop on Adversarial Reasoning in Multi-Agent Systems*, 2017.

Teaching

- Race Strategies Computation, Ferrari S.p.A. 2019
- Game Theory, Politecnico di Milano, TA 2019–2020
- Informatica A, Politecnico di Milano, TA '18–'19, '19–'20
- Economics and Computation, Politecnico di Milano, TA '17–'18, '18–'19

Honors and Awards

- NeurIPS 2020 Best Paper Award 2020
- Lesmo Award for the best Italian MSc Thesis in Artificial Intelligence 2017
- National Doctoral Scholarship 2016–2019
Sponsored by the Ministry of Education, Universities and Research

Talks

Invited Talks.....

- Bayesian Persuasion in Voting Scenarios 2019
At MAPLE'19 (Markets, Algorithms, Prediction and Learning) in Milan
- Adversarial Team Games 2017
At the International Conference of the Italian Association for Artificial Intelligence

Seminars.....

- Bayesian Persuasion 2017
At Politecnico di Milano, Permanent Itinerant Game Theory Seminars (P.I.G.S.)
- Adversarial Team Games 2017
At University of Milan-Bicocca, Permanent Itinerant Game Theory Seminars (P.I.G.S.)

Service

- PC: AAAI '18–'21, ECAI '20, IJCAI '20, NeurIPS '20. Reviewing: AAMAS '17, IJCAI '17-'19, WWW '20

Programming and Frameworks

- Programming languages: Python (Advanced), Java, C, R, RUST (beginner), Julia (beginner)
- Optimization frameworks: AMPL
- Solvers: CPLEX, Gurobi, BARON, Xpress

Languages

- Italian: mother tongue
- English: proficient user
 - IELTS Academic, Overall band score 8 (level C2) 2013