

# Andrea Celli

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## Employment

<b>Assistant Professor</b> <i>Bocconi University, Computing Sciences Department</i>	<b>Milan</b> September 2021 – Present
<b>Postdoctoral researcher</b> <i>Facebook Core Data Science</i>	<b>London</b> June 2020 – June 2021
<b>Postdoctoral researcher</b> <i>Politecnico di Milano</i>	<b>Milan</b> November 2019 – May 2020
<b>Other Affiliations</b> .....	
<b>Research Affiliate</b> <i>Bocconi Institute for Data Science and Analytics</i>	September 2021 – Present
<b>Member</b> <i>European Laboratory for Learning and Intelligent Systems (ELLIS)</i>	October 2021 – Present

## Education

<b>Politecnico di Milano</b> <i>PhD in Computer Science</i>	<b>Milan</b> 2016 – February 2020
<b>Carnegie Mellon University</b> <i>Visiting Scholar</i>	<b>Pittsburgh</b> Jan 2018 – May 2018
<b>Politecnico di Milano</b> <i>MSc in Computer Science and Engineering, Grade: 110 cum laude/110</i>	<b>Milan</b> 2014 – 2016
<b>Politecnico di Milano</b> <i>BSc in Computer Science and Engineering, Grade: 110 cum laude/110</i>	<b>Milan</b> 2011 – 2014

## Publications

<b>Conference Papers</b> .....	
[C1]	S. Gaucher, M. Bernasconi, M. Castiglioni, <b>A. Celli</b> , V. Perchet, "Feature-based online bilateral trade," in <i>ICLR</i> , 2025.
[C2]	M. Bernasconi, M. Castiglioni, <b>A. Celli</b> , F. Fusco, "Beyond primal-dual methods in bandits with stochastic and adversarial constraints," in <i>NeurIPS</i> , 2024.
[C3]	M. Russo, <b>A. Celli</b> , R. Colini Baldeschi, F. Fusco, D. Haimovich, D. Karamshuk, S. Leonardi, N. Tax, "Online learning with sublinear best-action queries," in <i>NeurIPS</i> , 2024.
[C4]	D. Drago, <b>A. Celli</b> , M. Elias, "Bandits with knapsacks and predictions," in <i>UAI</i> , 2024.
[C5]	M. Castiglioni, <b>A. Celli</b> , C. Kroer, "Online learning under budget and roi constraints via weak adaptivity," in <i>ICML</i> , 2024.
[C6]	M. Bernasconi, M. Castiglioni, <b>A. Celli</b> , F. Fusco, "No-regret learning in bilateral trade via global budget balance," in <i>STOC</i> , 2024.
[C7]	M. Bernasconi, M. Castiglioni, <b>A. Celli</b> , "Agent-designed contracts: How to sell hidden actions," in <i>EC</i> , 2024.
[C8]	B. Zhang, G. Farina, I. Anagnostides, F. Cacciamani, S. McAleer, A. Haupt, <b>A. Celli</b> , N. Gatti, V. Conitzer, T. Sandholm, "Steering no-regret learners to a desired equilibrium," in <i>EC</i> , 2024.

- [C9] M. Bernasconi, M. Castiglioni, **A. Celli**, F. Fusco, “Bandits with replenishable knapsacks: The best of both worlds,” in *ICLR*, 2024.
- [C10] B. Zhang, G. Farina, I. Anagnostides, F. Cacciamani, S. McAleer, A. Haupt, **A. Celli**, N. Gatti, V. Conitzer, T. Sandholm, “Computing optimal equilibria and mechanisms via learning in zero-sum extensive-form games,” in *NeurIPS*, 2023.
- [C11] M. Bernasconi, M. Castiglioni, **A. Celli**, A. Marchesi, F. Trovò, N. Gatti, “Optimal rates and efficient algorithms for online bayesian persuasion,” in *ICML*, 2023.
- [C12] V. Avadhanula, **A. Celli**, R. Colini-Baldeschi, S. Leonardi, M. Russo, “Fully dynamic online selection through online contention resolution schemes,” in *AAAI*, 2023.
- [C13] M. Castiglioni, **A. Celli**, A. Marchesi, G. Romano, N. Gatti, “A unifying framework for online optimization with long-term constraints,” in *NeurIPS*, 2022.
- [C14] M. Castiglioni, **A. Celli**, C. Kroer, “Online learning with knapsacks: The best of both worlds,” in *ICML*, 2022.
- [C15] B. Zhang, G. Farina, **A. Celli**, T. Sandholm, “Optimal correlated equilibria in general-sum extensive-form games: Fixed-parameter algorithms, hardness, and two-sided column-generation,” in *EC*, 2022.
- [C16] I. Anagnostides, G. Farina, C. Kroer, **A. Celli**, T. Sandholm, “Faster no-regret learning dynamics for extensive-form correlated and coarse correlated equilibria,” in *EC*, 2022.
- [C17] G. Birmpas, **A. Celli**, R. Colini-Baldeschi, S. Leonardi, “Fair equilibria in sponsored search auctions: The advertisers’ perspective,” in *IJCAI*, 2022.
- [C18] **A. Celli**, R. Colini-Baldeschi, C. Kroer, E. Sodomka, “The parity ray regularizer for pacing in auction markets,” in *TheWebConf*, 2022.
- [C19] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Connecting optimal ex-ante collusion in teams to extensive-form correlation: Faster algorithms and positive complexity results,” in *ICML*, 2021.
- [C20] M. Castiglioni, A. Marchesi, **A. Celli**, N. Gatti, “Multi-receiver online bayesian persuasion,” in *ICML*, 2021.
- [C21] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Signaling in bayesian network congestion games: The subtle power of symmetry,” in *AAAI*, 2021.
- [C22] F. Cacciamani, **A. Celli**, M. Ciccone, N. Gatti, “Multi-agent coordination in adversarial environments through signal mediated strategies,” in *AAMAS*, 2021.
- [C23] **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)*, also appeared at *Highlights Beyond EC '21 and IJCAI SCBP '21*, 2020.
- [C24] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Online bayesian persuasion,” in *NeurIPS (Spotlight presentation)*, 2020.
- [C25] **A. Celli**, S. Coniglio, N. Gatti, “Private bayesian persuasion with sequential games,” in *AAAI*, 2020.
- [C26] M. Castiglioni, **A. Celli**, N. Gatti, “Persuading voters: It’s easy to whisper, it’s hard to speak loud,” in *AAAI*, 2020.
- [C27] **A. Celli**, A. Marchesi, T. Bianchi, N. Gatti, “Learning to correlate in multi-player general-sum sequential games,” in *NeurIPS*, 2019.
- [C28] **A. Celli**, S. Coniglio, N. Gatti, “Computing optimal ex ante correlated equilibria in two-player sequential games,” in *AAMAS*, 2019.
- [C29] **A. Celli**, G. Romano, N. Gatti, “Personality-based representations of imperfect-recall games,” in *AAMAS (Extended Abstract)*, 2019.
- [C30] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Ex ante coordination and collusion in zero-sum multi-player extensive-form games,” in *NeurIPS*, 2018.
- [C31] **A. Celli** and N. Gatti, “Computational results for extensive-form adversarial team games,” in *AAAI*, 2018.

- [C32] **A. Celli**, A. Marchesi, N. Gatti, “On the complexity of nash equilibrium reoptimization,” in *UAI*, 2017.
- [C33] N. Basilico, **A. Celli**, G. De Nittis, N. Gatti, “Team-maxmin equilibrium: Efficiency bounds and algorithms,” in *AAAI*, 2017.
- [C34] 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] B. H. Zhang, G. Farina, **A. Celli**, T. Sandholm, “Optimal correlated equilibria in general-sum extensive-form games: Fixed-parameter algorithms, hardness, and two-sided column-generation,” *Mathematics of Operations Research*, 2025.
- [J2] M. Castiglioni, **A. Celli**, N. Gatti, “Public bayesian persuasion: Being almost optimal and almost persuasive,” *Algorithmica*, 2023.
- [J3] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Regret minimization in online bayesian persuasion: Handling adversarial receiver’s types under full and partial feedback models,” *Artificial Intelligence Journal (AIJ)*, 2023.
- [J4] G. Farina, **A. Celli**, A. Marchesi, N. Gatti, “Simple uncoupled no-regret learning dynamics for extensive-form correlated equilibrium,” *Journal of the ACM*, 2022.
- [J5] **A. Celli** and A. Marchesi, “Learning dynamics in limited-control repeated games,” *Intelligenza Artificiale*, 2018.
- [J6] 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] M. Bernasconi, M. Castiglioni, **A. Celli**, F. Fusco, “No-regret learning in bilateral trade via global budget balance,” in *Ninth Marketplace Innovation Workshop (MIW)*, 2024.
- [W2] M. Castiglioni, **A. Celli**, A. Marchesi, G. Romano, N. Gatti, “A unifying framework for online optimization with long-term constraints,” in *NeurIPS ML Safety workshop*, 2022.
- [W3] B. Zhang, G. Farina, **A. Celli**, T. Sandholm, “Optimal correlated equilibria in general-sum extensive-form games: Fixed-parameter algorithms, hardness, and two-sided column-generation,” in *ICLR, Workshop on Gamification and Multiagent Solutions*, 2022.
- [W4] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, “Connecting optimal ex-ante collusion in teams to extensive-form correlation: Faster algorithms and positive complexity results,” in *AAAI, Workshop on Reinforcement Learning in Games*, 2022.
- [W5] **A. Celli**, R. Colini-Baldeschi, C. Kroer, E. Sodomka, “The parity ray regularizer for pacing in auction markets,” in *Sixth Marketplace Innovation Workshop (MIW)*, 2021.
- [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 *AAAI, Workshop on Reinforcement Learning in Games*, 2021.
- [W7] M. Castiglioni, **A. Celli**, A. Marchesi, N. Gatti, “Online bayesian persuasion,” in *AAAI, Workshop on Reinforcement Learning in Games*, 2021.
- [W8] **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.
- [W9] —, “No-regret learning dynamics for extensive-form correlated equilibrium,” in *NeurIPS, Cooperative AI Workshop*, 2020.
- [W10] F. Cacciamani, **A. Celli**, M. Ciccone, N. Gatti, “Multi-agent coordination through signal mediated strategies,” in *NeurIPS, Cooperative AI Workshop*, 2020.
- [W11] 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.

- [W12] **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.
- [W13] G. Farina, **A. Celli**, N. Gatti, T. Sandholm, "Ex ante coordination in team games," in *AAAI, Workshop on Reinforcement Learning in Games*, 2019.
- [W14] **A. Celli** and A. Marchesi, "Nash equilibrium reoptimization is hard," in *IJCAI, Algorithmic Game Theory Workshop*, 2017.
- [W15] 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.

## Honors and Awards

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

## External Funding

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- o **2024-2029**: ERC Starting Grant Project "PLA-STEER". Sole PI. €1M+
- o **2023-2025**: MUR PRIN Project "Targeted Learning Dynamics: Computing Efficient and Fair Equilibria through No-Regret Algorithms". Lead PI. €195,200 (my share: €97,600)
- o **2022-2023**: "Multi-agent learning and equilibrium (EquiLearn)" funded by Civica Research. With Galit Ashkenazi-Golan, Katerina Papadaki, Bernhard von Stengel (PI), and Mark Voorneveld.

## Bocconi Teaching

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- o Deep Learning and Reinforcement Learning (M.Sc. class), Course Director  
*Spring 2024, 2025*
- o Machine Learning, Bocconi University (B.Sc. class), Course Director  
*Spring 2023, 2024, 2025*
- o Optimization, Bocconi University (Ph.D. in Statistics and Computer Science), Course Director  
*Fall 2021, 2022, 2023, 2024*
- o Algorithms, Bocconi University (M.Sc. class), Professor  
*Spring 2022*
- o Computer Programming and Database Systems, Bocconi University (M.Sc. class), Professor  
*Fall 2021, 2022*

## Prior Teaching

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- o Game Theory, Politecnico di Milano (M.Sc.), TA 2019–2020
- o Informatica A, Politecnico di Milano (B.Sc.), TA '18–'19, '19–'20
- o Economics and Computation, Politecnico di Milano (M.Sc.), TA '17–'18, '18–'19

## Industry Training & Courses

- o Race Strategies Computation, Ferrari S.p.A. 2019

## Invited Talks

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- o Institut d'Etudes Scienfitiques, "From Matching to Market" workshop, Cargèse 2025
- o Politecnico di Milano, FAIR AI Seminar, Milan 2025

- ENSAE, Seminar of the Statistics and Economics Department, Paris 2023
- Criteo's AI Labs, Paris 2023
- Workshop on Game Theory and Machine Learning, London School of Economics 2023
- Workshop “Learning in games”, Institute for Mathematical Sciences, Singapore 2023
- London School of Economics Seminar Series on Combinatorics, Games and Optimisation 2022
- ELLIS Milan Artificial Intelligence workshop 2022
- INFORMS session on Operations Research at Facebook 2021
- Invited talk at explAI workshop (Virtual) 2021
- Facebook London ML Seminars (Virtual) 2021
- Facebook Economics, Algorithms and Optimization Seminars (Virtual) 2021
- Coveo ML Seminars (Virtual) 2021
- Politecnico di Milano, MAPLE workshop, Milan 2019
- Invited talk at International Conference of the AI\*IA 2017

## Service

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- **Thesis committee member:** Luca Carminati (Politecnico di Torino, 2025)
- **Grant peer review:** reviewer for European Research Council (ERC) grant
- **Program committee member:** EC 2025, NeurIPS (2020–2024), ICML (2022, 2023, 2024), AAAI (2018–2023), ECAI (2020), IJCAI (2020–2023), , WINE (2021)
- **Journal peer review:** Mathematical Programming (2025), European Journal of Operational Research (2024), Mathematics of Operations Research (2023), Journal of Economic Theory (2022), Management Science (2022)
- **Conference peer review:** FOCS 2025, SODA 2023, EC (2021, 2022), ICML (2021), TheWeb-Conf (2020), AAMAS (2017), IJCAI (2017–2019)

## Organization of International Events

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- **2023:** Co-organizer of the “Algorithms, Learning, and Games” (ALGA) workshop, June 5-9 2023, Scicli (Italy).

## Organization of Internal Events

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- **2023:** ELLIS Pre-NeurIPS Fest: poster session of the Milan ELLIS unit held at Bocconi

## Programming and Frameworks

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- Programming languages: Python, Java, C, R
- Optimization frameworks: AMPL, CPLEX, Gurobi, Xpress

## Languages

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