

# Andrea Celli

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## Employment

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

## Education

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

## Publications

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### Conference Papers

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- [C1] *Improved Hardness Results for Min-Max Optimization with Coupled Constraints*  
M. Bernasconi, M. Castiglioni, A. Celli, and G. Farina, *EC*, 2026.
- [C2] *Optimal Rates for Feasible Payoff Set Estimation in Games*  
A. Barbara, R. Poiani, M. Bernasconi, and A. Celli, *ICML (Spotlight)*, 2026.
- [C3] *Pure Exploration with Infinite Answers*  
R. Poiani, M. Bernasconi, and A. Celli, *AISTATS (Spotlight)*, 2026.
- [C4] *Nonparametric Contextual Online Bilateral Trade*  
E. Coccia, M. Bernasconi, and A. Celli, *ICLR*, 2026.
- [C5] *Non-Asymptotic Analysis of (Sticky) Track-and-Stop*  
R. Poiani, M. Bernasconi, and A. Celli, *ICLR (Oral)*, 2026.
- [C6] *Nearly-optimal bandit learning in stackelberg games with side information*  
M.-F. Balcan, M. Bernasconi, M. Castiglioni, A. Celli, K. Harris, and Z. S. Wu, *ICLR*, 2026.
- [C7] *The Complexity of Correlated Equilibria in Generalized Games*  
M. Bernasconi, M. Castiglioni, A. Celli, and G. Farina, *NeurIPS*, 2025.

- [C8] *No-regret is not enough! Bandits with general constraints through adaptive regret minimization*  
M. Bernasconi, M. Castiglioni, and A. Celli, *ICML*, 2025.
- [C9] *Online Learning in the Random-Order Model*  
M. Bernasconi, A. Celli, R. Colini-Baldeschi, F. Fusco, S. Leonardi, and M. Russo, *ICML*, 2025.
- [C10] *Feature-based online bilateral trade*  
S. Gaucher, M. Bernasconi, M. Castiglioni, A. Celli, and V. Perchet, *ICLR*, 2025.
- [C11] *Beyond primal-dual methods in bandits with stochastic and adversarial constraints*  
M. Bernasconi, M. Castiglioni, A. Celli, and F. Fusco, *NeurIPS*, 2024.
- [C12] *Online learning with sublinear best-action queries*  
M. Russo, A. Celli, R. Colini Baldeschi, F. Fusco, D. Haimovich, D. Karamshuk, S. Leonardi, and N. Tax, *NeurIPS*, 2024.
- [C13] *Bandits with Knapsacks and Predictions*  
D. Drago, A. Celli, and M. Elias, *UAI*, 2024.
- [C14] *Online Learning Under Budget and ROI Constraints via Weak Adaptivity*  
M. Castiglioni, A. Celli, and C. Kroer, *ICML*, 2024.
- [C15] *No-Regret Learning in Bilateral Trade via Global Budget Balance*  
M. Bernasconi, M. Castiglioni, A. Celli, and F. Fusco, *STOC*, 2024.
- [C16] *Agent-Designed Contracts: How to Sell Hidden Actions*  
M. Bernasconi, M. Castiglioni, and A. Celli, *EC*, 2024.
- [C17] *Steering No-Regret Learners to a Desired Equilibrium*  
B. Zhang, G. Farina, I. Anagnostides, F. Cacciamani, S. McAleer, A. Haupt, A. Celli, N. Gatti, V. Conitzer, and T. Sandholm, *EC*, 2024.
- [C18] *Bandits with Replenishable Knapsacks: the Best of both Worlds*  
M. Bernasconi, M. Castiglioni, A. Celli, and F. Fusco, *ICLR*, 2024.
- [C19] *Computing optimal equilibria and mechanisms via learning in zero-sum extensive-form games*  
B. Zhang, G. Farina, I. Anagnostides, F. Cacciamani, S. McAleer, A. Haupt, A. Celli, N. Gatti, V. Conitzer, and T. Sandholm, *NeurIPS*, 2023.
- [C20] *Optimal Rates and Efficient Algorithms for Online Bayesian Persuasion*  
M. Bernasconi, M. Castiglioni, A. Celli, A. Marchesi, F. Trovò, and N. Gatti, *ICML*, 2023.
- [C21] *Fully Dynamic Online Selection through Online Contention Resolution Schemes*  
V. Avadhanula, A. Celli, R. Colini-Baldeschi, S. Leonardi, and M. Russo, *AAAI*, 2023.
- [C22] *A Unifying Framework for Online Optimization with Long-Term Constraints*  
M. Castiglioni, A. Celli, A. Marchesi, G. Romano, and N. Gatti, *NeurIPS*, 2022.
- [C23] *Online Learning with Knapsacks: the Best of Both Worlds*  
M. Castiglioni, A. Celli, and C. Kroer, *ICML (Spotlight)*, 2022.
- [C24] *Optimal Correlated Equilibria in General-Sum Extensive-Form Games: Fixed-Parameter Algorithms, Hardness, and Two-Sided Column-Generation*  
B. Zhang, G. Farina, A. Celli, and T. Sandholm, *EC*, 2022.
- [C25] *Faster No-Regret Learning Dynamics for Extensive-Form Correlated and Coarse Correlated Equilibria*  
I. Anagnostides, G. Farina, C. Kroer, A. Celli, and T. Sandholm, *EC*, 2022.
- [C26] *Fair Equilibria in Sponsored Search Auctions: the Advertisers' Perspective*  
G. Birmpas, A. Celli, R. Colini-Baldeschi, and S. Leonardi, *IJCAI*, 2022.
- [C27] *The parity ray regularizer for pacing in auction markets*  
A. Celli, R. Colini-Baldeschi, C. Kroer, and E. Sodomka, *TheWebConf*, 2022.
- [C28] *Connecting Optimal Ex-Ante Collusion in Teams to Extensive-Form Correlation: Faster Algorithms and Positive Complexity Results*  
G. Farina, A. Celli, N. Gatti, and T. Sandholm, *ICML (Spotlight)*, 2021.
- [C29] *Multi-Receiver Online Bayesian Persuasion*  
M. Castiglioni, A. Marchesi, A. Celli, and N. Gatti, *ICML*, 2021.

- [C30] *Signaling in Bayesian Network Congestion Games: the Subtle Power of Symmetry*  
M. Castiglioni, A. Celli, A. Marchesi, and N. Gatti, *AAAI*, 2021.
- [C31] *Multi-Agent Coordination in Adversarial Environments through Signal Mediated Strategies*  
F. Cacciamani, A. Celli, M. Ciccone, and N. Gatti, *AAMAS*, 2021.
- [C32] *No-Regret Learning Dynamics for Extensive-Form Correlated Equilibrium*  
A. Celli, A. Marchesi, G. Farina, and N. Gatti, *NeurIPS (Oral presentation and best paper award)*,  
*also appeared at Highlights Beyond EC '21 and IJCAI SCBP '21*, 2020.
- [C33] *Online Bayesian Persuasion*  
M. Castiglioni, A. Celli, A. Marchesi, and N. Gatti, *NeurIPS (Spotlight)*, 2020.
- [C34] *Private Bayesian Persuasion with Sequential Games*  
A. Celli, S. Coniglio, and N. Gatti, *AAAI*, 2020.
- [C35] *Persuading Voters: It's Easy to Whisper, It's Hard to Speak Loud*  
M. Castiglioni, A. Celli, and N. Gatti, *AAAI*, 2020.
- [C36] *Learning to Correlate in Multi-Player General-Sum Sequential Games*  
A. Celli, A. Marchesi, T. Bianchi, and N. Gatti, *NeurIPS*, 2019.
- [C37] *Computing Optimal Ex Ante Correlated Equilibria in Two-Player Sequential Games*  
A. Celli, S. Coniglio, and N. Gatti, *AAMAS*, 2019.
- [C38] *Personality-Based Representations of Imperfect-Recall Games*  
A. Celli, G. Romano, and N. Gatti, *AAMAS (Extended Abstract)*, 2019.
- [C39] *Ex Ante Coordination and Collusion in Zero-Sum Multi-Player Extensive-Form Games*  
G. Farina, A. Celli, N. Gatti, and T. Sandholm, *NeurIPS*, 2018.
- [C40] *Computational Results for Extensive-Form Adversarial Team Games*  
A. Celli and N. Gatti, *AAAI*, 2018.
- [C41] *On the Complexity of Nash Equilibrium Reoptimization*  
A. Celli, A. Marchesi, and N. Gatti, *UAI*, 2017.
- [C42] *Team-maxmin equilibrium: efficiency bounds and algorithms*  
N. Basilico, A. Celli, G. De Nittis, and N. Gatti, *AAAI*, 2017.
- [C43] *Coordinating multiple defensive resources in patrolling games with alarm systems*  
N. Basilico, A. Celli, G. D. Nittis, and N. Gatti, *AAMAS*, 2017.

## Journal Papers.....

- [J1] *No-Regret Learning in Bilateral Trade via Global Budget Balance*  
M. Bernasconi, M. Castiglioni, A. Celli, and F. Fusco, *SIAM Journal on Computing (SICOMP)*,  
(to appear).
- [J2] *Optimal Correlated Equilibria in General-Sum Extensive-Form Games: Fixed-Parameter Algorithms, Hardness, and Two-Sided Column-Generation*  
B. H. Zhang, G. Farina, A. Celli, and T. Sandholm, *Mathematics of Operations Research*, 2025.
- [J3] *Public Bayesian Persuasion: Being Almost Optimal and Almost Persuasive*  
M. Castiglioni, A. Celli, and N. Gatti, *Algorithmica*, 2023.
- [J4] *Regret Minimization in Online Bayesian Persuasion: Handling Adversarial Receiver's Types under Full and Partial Feedback Models*  
M. Castiglioni, A. Celli, A. Marchesi, and N. Gatti, *Artificial Intelligence Journal (AIJ)*, 2023.
- [J5] *Simple Uncoupled No-Regret Learning Dynamics for Extensive-Form Correlated Equilibrium*  
G. Farina, A. Celli, A. Marchesi, and N. Gatti, *Journal of the ACM*, 2022.

## Working Papers.....

- [C1] *Min-Max Optimization Requires Exponentially Many Queries*  
M. Bernasconi, M. Castiglioni, A. Celli, and A. Hollender, *arXiv preprint arXiv:2605.13806*, 2026.
- [C2] *Single-dimensional Contract Design: Efficient Algorithms and Learning*  
M. Bernasconi, M. Castiglioni, and A. Celli, *arXiv preprint arXiv:2502.11661*, 2025.

## Refereed Workshop Papers.....

- [W1] *No-Regret Learning in Bilateral Trade via Global Budget Balance*  
M. Bernasconi, M. Castiglioni, A. Celli, and F. Fusco, *Ninth Marketplace Innovation Workshop (MIW)*, 2024.
- [W2] *A Unifying Framework for Online Optimization with Long-Term Constraints*  
M. Castiglioni, A. Celli, A. Marchesi, G. Romano, and N. Gatti, *NeurIPS ML Safety workshop*, 2022.
- [W3] *Optimal Correlated Equilibria in General-Sum Extensive-Form Games: Fixed-Parameter Algorithms, Hardness, and Two-Sided Column-Generation*  
B. Zhang, G. Farina, A. Celli, and T. Sandholm, *Workshop on Gamification and Multiagent Solutions*, 2022.
- [W4] *Connecting Optimal Ex-Ante Collusion in Teams to Extensive-Form Correlation: Faster Algorithms and Positive Complexity Results*  
G. Farina, A. Celli, N. Gatti, and T. Sandholm, *Workshop on Reinforcement Learning in Games*, 2022.
- [W5] *The Parity Ray Regularizer for Pacing in Auction Markets*  
A. Celli, R. Colini-Baldeschi, C. Kroer, and E. Sodomka, *Sixth Marketplace Innovation Workshop (MIW)*, 2021.
- [W6] *Faster Algorithms for Optimal Ex-Ante Coordinated Collusive Strategies in Extensive-Form Zero-Sum Games*  
G. Farina, A. Celli, N. Gatti, and T. Sandholm, *Workshop on Reinforcement Learning in Games*, 2021.
- [W7] *Online Bayesian Persuasion*  
M. Castiglioni, A. Celli, A. Marchesi, and N. Gatti, *Workshop on Reinforcement Learning in Games*, 2021.
- [W8] *No-Regret Learning Dynamics for Extensive-Form Correlated Equilibrium*  
A. Celli, A. Marchesi, G. Farina, and N. Gatti, *Workshop on Reinforcement Learning in Games*, 2021.
- [W9] *No-Regret Learning Dynamics for Extensive-Form Correlated Equilibrium*  
A. Celli, A. Marchesi, G. Farina, and N. Gatti, *Cooperative AI Workshop*, 2020.
- [W10] *Multi-Agent Coordination through Signal Mediated Strategies*  
F. Cacciamani, A. Celli, M. Ciccone, and N. Gatti, *Cooperative AI Workshop*, 2020.
- [W11] *Faster Algorithms for Optimal Ex-Ante Coordinated Collusive Strategies in Extensive-Form Zero-Sum Games*  
G. Farina, A. Celli, N. Gatti, and T. Sandholm, *Cooperative AI Workshop*, 2020.
- [W12] *Learning to Correlate in Multi-Player General-Sum Sequential Games*  
A. Celli, A. Marchesi, T. Bianchi, and N. Gatti, *Smooth Games Optimization and Machine Learning Workshop*, 2019.
- [W13] *Ex ante coordination in team games*  
G. Farina, A. Celli, N. Gatti, and T. Sandholm, *Workshop on Reinforcement Learning in Games*, 2019.
- [W14] *Nash Equilibrium Reoptimization is Hard*  
A. Celli and A. Marchesi, *Algorithmic Game Theory Workshop*, 2017.
- [W15] *Coordinating multiple defensive resources in patrolling games with alarm systems*  
N. Basilico, A. Celli, G. D. Nittis, and N. Gatti, *Workshop on Adversarial Reasoning in Multi-Agent Systems*, 2017.

## 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.

## Honors and Awards

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- o Marco Somalvico Award (awarded by Italian Association for Artificial Intelligence AIxIA) 2025
- o Best Italian Young Researcher in Theoretical Computer Science (awarded by the Italian Chapter of EATCS) 2025
- o NeurIPS 2020 Best Paper Award 2020
- o Lesmo Award for the best MSc Thesis in Artificial Intelligence (awarded by the Italian Association for Artificial Intelligence AIxIA) 2017

## Organization of International Events

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- o **2026**: Local Chair of the Twenty-Seventh ACM Conference on Economics and Computation (EC'26), Rome (Italy).
- o **2026**: Organizer of the ACM EC 2026 workshop "Online Learning and Economics" (OLE), July 6 2026, Rome (Italy).
- o **2025**: Organizer of the ACM EC 2025 workshop "Online Learning and Economics" (OLE), July 10 2025, Stanford (CA, USA).
- o **2025**: Organizer of the Second "Algorithms, Learning, and Games" (ALGA) workshop, June 9-13 2025, Villasimius (Italy).
- o **2023**: Organizer of the First "Algorithms, Learning, and Games" (ALGA) workshop, June 5-9 2023, Scicli (Italy).

## Organization of Internal Events

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- o **2025**: Bocconi Theory Day
- o **2023**: ELLIS Pre-NeurIPS Fest: poster session of the Milan ELLIS unit held at Bocconi

## Invited Talks

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- o Invited talk for EATCS Prize Ceremony at ICTCS, University of Pescara 2025
- o Institut d'Etudes Scienfitiques, "From Matching to Market" workshop, Cargèse 2025
- o Politecnico di Milano, FAIR AI Seminar, Milan 2025
- o ENSAE, Seminar of the Statistics and Economics Department, Paris 2023
- o Criteo's AI Labs, Paris 2023
- o Workshop on Game Theory and Machine Learning, London School of Economics 2023
- o Workshop "Learning in games", Institute for Mathematical Sciences, Singapore 2023
- o London School of Economics Seminar Series on Combinatorics, Games and Optimisation 2022
- o ELLIS Milan Artificial Intelligence workshop 2022
- o INFORMS session on Operations Research at Facebook 2021
- o Invited talk at explAI workshop (Virtual) 2021
- o Facebook London ML Seminars (Virtual) 2021
- o Facebook Economics, Algorithms and Optimization Seminars (Virtual) 2021
- o Coveo ML Seminars (Virtual) 2021
- o Politecnico di Milano, MAPLE workshop, Milan 2019
- o Invited talk at International Conference of the AI\*IA 2017

## Advising & Mentoring

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### PostDocs.....

- Martino Bernasconi (2023 – Present)
- Riccardo Poiani (2024 – Present)
- Sarah Sachs (2024 – 2025)

### M.Sc. Students.....

- Annalisa Barbara (2025)
- Emanuele Coccia (2024 – 2025)
- Antonio Preiti (2024)
- Davide Drago (2023)

## Teaching at Bocconi

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- Deep Learning and Reinforcement Learning (M.Sc. class), Course Director (teaching RL section)  
*Spring 2024, 2025, 2026*
- Machine Learning (B.Sc. class), Course Director  
*Spring 2023, 2024, 2025, 2026*
- Optimization (Ph.D. in Statistics and Computer Science), Course Director  
*Fall 2021, 2022, 2023, 2024, 2025*
- Algorithms (M.Sc. class), Professor  
*Spring 2022*
- Computer Programming and Database Systems (M.Sc. class), Professor  
*Fall 2021, 2022*

## Prior Teaching

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

### Industry Training & Courses

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

## Service

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- **Grant peer review:** reviewer for European Research Council (ERC) grant, Vienna Science and Technology Fund (WWTF)
- **Thesis referee/committee member:** Luca Carminati (Politecnico di Torino, 2025), Lukas Zierahn (Politecnico di Torino, 2025), David Sychrovský (Charles University, 2025)
- **Area Chair:** ICML 2026, NeurIPS 2026
- **Program committee member:** ICLR 2026, EC (2025,2026), NeurIPS (2020–2025), ICML (2022, 2023, 2024), AAAI (2018–2023), ECAI (2020), IJCAI (2020–2023), WINE (2021)
- **Journal peer review:** Transactions on Economics and Computation (2026), Autonomous Agents and Multi-Agent Systems (2026), Mathematical Programming (2025), European Journal of Operational Research (2024), Mathematics of Operations Research (2023,2025), Journal of Economic Theory (2022), Management Science (2022)
- **Conference peer review:** ICALP (2026), STOC (2026), FOCS (2025,2026), SODA (2023), EC (2021, 2022), ICML (2021), TheWebConf (2020), AAMAS (2017), IJCAI (2017–2019)

## Public Engagement & Outreach

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- o Speaker at MEETmeTONIGHT (outreach event in Milan within the EU project MEET (Mission: Engagement and Education for Tomorrow)) Milan, 2025
- o General-audience article (in Italian): "*Che succede quando i sistemi di IA interagiscono tra loro?*" Eco Magazine, 7/2024 2024