Francesco Emanuele Stradi

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About Me

I am a Ph.D. student in computer science at Politecnico di Milano, where I am advised by Prof. Nicola Gatti. My current research focuses on online reinforcement learning (RL) in constrained Markov decision processes. In particular, I am interested in combining online (machine) learning theoretical tools with optimization techniques to build strategic agents able to act in complex constrained online environments.

Education

- **Politecnico di Milano** — *2022 - now*
  PhD in Computer Science — Milan, Italy
  ◦ Advised by Prof. Nicola Gatti
- **Columbia University** — *February - April 2025*
  Visiting Scholar — New York City, USA
  ◦ Working with Prof. Christian Kroer at IEOR Department
- **Politecnico di Milano** — *2019 - 2022*
  Msc in Computer Science and Engineering — Milan, Italy
  ◦ Grade: 110 cum laude/110
- **Politecnico di Milano** — *2016 - 2019*
  Bsc in Computer Engineering — Milan, Italy

Experience

- **lastminute.com** — *June - September 2024*
  Machine Learning Scientist, internship — Chiasso, Switzerland
  ◦ In charge of developing online learning algorithms for dynamic pricing
- **Polimi Artificial Intelligence Research and Innovation Center (Airic)** — *August - October 2022*
  Research Scientist, internship — Milan, Italy
  ◦ In charge of selecting State-Of-The-Art artificial intelligence techniques and applying them in real world business oriented scenarios

Publications

C=Conference, J=Journal, W=Workshop

[C.1] **Francesco Emanuele Stradi**, Matteo Castiglioni, Alberto Marchesi, Nicola Gatti and Christian Kroer (2025). **No-Regret Learning Under Adversarial Resource Constraints: A Spending Plan Is All You Need!**. In *The 39th Conference on Neural Information Processing Systems [NeurIPS 2025].*

[C.2] Gianmarco Genalti*, **Francesco Emanuele Stradi***, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Data-Dependent Regret Bounds for Constrained MABs**. In *The 39th Conference on Neural Information Processing Systems [NeurIPS 2025].*

[C.3] **Francesco Emanuele Stradi**, Anna Lunghi, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Taming Adversarial Constraints in CMDPs**. In *The 39th Conference on Neural Information Processing Systems [NeurIPS 2025].*

[C.4] Francesco Bacchiocchi*, **Francesco Emanuele Stradi***, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Markov Persuasion Processes: Learning to Persuade From Scratch**. In *The 39th Conference on Neural Information Processing Systems [NeurIPS 2025].*

[C.5] **Francesco Emanuele Stradi**, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Learning Adversarial MDPs with Stochastic Hard Constraints**. In *The 42nd International Conference on Machine Learning [ICML 2025].*

[C.6] **Francesco Emanuele Stradi**, Anna Lunghi, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Policy Optimization for CMDPs with Bandit Feedback: Learning Stochastic and Adversarial Constraints**. In *The 42nd International Conference on Machine Learning [ICML 2025].*

[C.7] **Francesco Emanuele Stradi**, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Optimal Strong Regret and Violation in Constrained MDPs via Policy Optimization**. In *The 13th International Conference on Learning Representations [ICLR 2025].*

[C.8] Davide Maran*, Francesco Bacchiocchi*, **Francesco Emanuele Stradi***, Matteo Castiglioni, Nicola Gatti and Marcello Restelli (2024). **Bandits with Ranking Feedback**. In *The 38th Conference on Neural Information Processing Systems [NeurIPS 2024].*

[C.9] **Francesco Emanuele Stradi**, Jacopo Germano, Gianmarco Genalti, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2024). **Online Learning in CMDPs: Handling Stochastic and Adversarial Constraints**. In *The 41st International Conference on Machine Learning [ICML 2024].*

[C.10] Francesco Bacchiocchi*, **Francesco Emanuele Stradi***, Matteo Papini, Alberto Maria Metelli, and Nicola Gatti (2024). **Online Learning with Off-Policy Feedback in Adversarial MDPs**. In *The 33rd International Joint Conference on Artificial Intelligence [IJCAI 2024].*

[C.11] Davide Maran*, Pierricardo Olivieri*, **Francesco Emanuele Stradi***, Nicola Gatti and Marcello Restelli (2024). **Online Markov Decision Processes Configuration with Continuous Decision Space**. In *The 38th AAAI Conference on Artificial Intelligence [AAAI 2024].*

[W.1] **Francesco Emanuele Stradi**, Anna Lunghi, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Taming Adversarial Constraints in Constrained MDPs**. In *The 18th European Workshop on Reinforcement Learning [EWRL 2025].*

[W.2] **Francesco Emanuele Stradi**, Anna Lunghi, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2025). **Policy Optimization for CMDPs with Bandit Feedback: Learning Stochastic and Adversarial Constraints**. In *The 18th European Workshop on Reinforcement Learning [EWRL 2025].*

[W.3] **Francesco Emanuele Stradi**, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2024). **Online learning in CMDPs with adversarial losses and stochastic hard constraints**. In *The 17th European Workshop on Reinforcement Learning [EWRL 2024].*

[W.4] Francesco Bacchiocchi*, **Francesco Emanuele Stradi***, Matteo Castiglioni, Alberto Marchesi and Nicola Gatti (2024). **Markov Persuasion Processes: How to Persuade Multiple Agents From Scratch**. In *ICML 2024 Workshop: Aligning Reinforcement Learning Experimentalists and Theorists [ARLET 2024].*

[W.5] Francesco Bacchiocchi*, **Francesco Emanuele Stradi***, Matteo Papini, Alberto Maria Metelli and Nicola Gatti (2023). **Online Adversarial MDPs with Off-Policy Feedback and Known Transitions**. In *The 16th European Workshop on Reinforcement Learning [EWRL 2023].*

[W.6] Davide Maran*, Pierricardo Olivieri*, **Francesco Emanuele Stradi***, Nicola Gatti and Marcello Restelli. (2023). **Online Configuration in Continuous Decision Space**. In *The 16th European Workshop on Reinforcement Learning [EWRL 2023].*

* stands for equal contribution

Teaching

- **Probabilità e Statistica Matematica, TA** *Spring 2024*
  Politecnico di Milano
  ◦ Bsc in Management Engineering
- **Statistica, TA** *Spring 2024*
  Politecnico di Milano
  ◦ Bsc in Mechanical Engineering

Service

- **Reviewing:** ICLR (2025, 2026), ICML (2025), NeurIPS (2025)

Programming

- **Programming Languages:** C, Java, Python, SQL, Ampl

Additional Information

- **Languages:** Italian (Native), English (Proficiency level)

References

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