

# Alberto Rumi

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✉ alberto.rumi@unimi.it  
🎓 Scholar

I am a PhD Student at **Laboratory for Artificial Intelligence and Learning Algorithms (LAILA)** and **CENTAI Institute** under the supervision of Nicolò Cesa-Bianchi and Fabio Vitale. My area of research centers around Online Learning, Multi-Armed Bandits and Reinforcement Learning Theory.

## Experience

01/2023 – Current

*Turin, Italy*

📌 **Research Internship and Ongoing Collaboration at CENTAI Institute.** Joined CENTAI for a 9-month research internship, which evolved into a part-time collaboration during my PhD. Worked on a *churn prediction* model for *Isybank*, a *policy optimization system* for customer outreach and recommendation notifications, and a current project on re-engaging inactive users.

10/2022 – Current

*Milan, Italy*

📌 **Ph.D. Student** under the supervision of Nicolò Cesa-Bianchi and Fabio Vitale at University of Milan and CENTAI Institute.  
*Main focus:* Multi-Armed Bandits, Online learning and Reinforcement Learning Theory.

10/2024 – 04/2025

*London, UK*

📌 **Visiting PhD Student** at Imperial College London, under the supervision of Prof. Ciara Pike-Burke. With the support of [ELIAS](#) grant.

## Education

09/2020 – 09/2022,

*Milan, Italy*

📌 **M.Sc. Computer Science** in University of Milan.  
*Thesis:* under the supervision of prof. Christian Quadri, "*Multi-agent distributed reinforcement learning for multi-user edge service orchestration*"  
**110 cum laude/110**

09/2021 – 02/2022

*Louvain la Neuve, Belgium*

📌 **Exchange Student** at Université Catholique de Louvain.

09/2017 – 07/2020

*Milan, Italy*

📌 **B.Sc. Computer Science** at University of Milan.

## Publications





- 1 Y. Kuroki, A. Rumi, T. Tsuchiya, F. Vitale, and N. Cesa-Bianchi, "Best-of-both-worlds algorithms for linear contextual bandits," in *International Conference on Artificial Intelligence and Statistics (AISTATS)*, PMLR, 2024.
- 2 S. Pasteris, A. Rumi, M. Thiessen, *et al.*, "Bandits with abstention under expert advice," in *Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS)*, PMLR, 2024.

- 3 S. Pasteris, A. Rumi, F. Vitale, and N. Cesa-Bianchi, "Sum-max submodular bandits," in *Proceedings of The 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*, PMLR, 2024.






## Under Review

- 1 E. Johnson, A. Rumi, C. Pike-Burke, and P. Rebeschini, "Stochastic shortest path with sparse adversarial costs," Under review, 2025.
- 2 A. Rumi, A. Jacobsen, N. Cesa-Bianchi, and F. Vitale, "Parameter-free dynamic regret for unconstrained linear bandits," Under review, 2025.



## Talks & Training

- 05/2025  **Invited Speaker** at Imperial College London, closed seminar, title of presentation: "*Stochastic Shortest Paths and Sparsity*".
- 03/2024  **Invited Speaker** at University of Tokyo, title of presentation: "*Bandits with abstention under expert advice*".
-  **Machine Learning Summer School (MLSS)** in Okinawa.
- 07/2023  **Reinforcement Learning Summer School (RLSS)** in Barcelona.

## Skills

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|------------------------|--|
| Programming Languages  |  <i>Expert:</i> Python, Java, C++.<br><i>Proficient:</i> Erlang, OCaml, Scala, C  |
| Machine Learning       |  <i>Frameworks:</i> PyTorch, TensorFlow, scikit-learn, JAX<br><i>Specialization:</i> Multi-Armed Bandits, Online Learning, Reinforcement Learning   |
| Research & Development |  <i>Mathematical Tools:</i> Optimization theory, Probability theory, Statistical analysis<br><i>Simulation:</i> OMNeT++, AnyLogic<br><i>Version Control:</i> Git, GitHub<br><i>Documentation:</i> LaTeX, Markdown |
| Data & Analytics       |  <i>Tools:</i> SQL, Spark, Polars<br><i>Visualization:</i> Advanced plotting, statistical graphics  |
| Languages Spoken       |  <i>Native:</i> Italian<br><i>Fluent:</i> English<br><i>Basic conversational:</i> Spanish   |

## Hobbies

-  **Athletics:** 12-year basketball career with Bergamo representative team, followed by Muay Thai and MMA training. Currently practicing calisthenics and yoga, preparing for first IronMan 70.3.
-  **Music:** Piano and guitar player since age 14. Currently exploring music production with Ableton Live 10 Suite.