

Mehdi Christian Talbi

Curriculum Vitae

Université Paris-Cité
Laboratoire de Probabilités, Statistiques et Modélisation
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Research interests

Stochastic control, mean field games, contract theory, deep learning, mathematical finance...

Experience

- 2023-present **Assistant professor (maître de conférences)**, Université Paris-Cité, Paris
- 2022-2023 **Postdoctoral researcher**, ETH Zürich, Zürich
- 2019-2022 **PhD student and teaching assistant**, École polytechnique, Palaiseau
- 2018 **Quantitative analyst intern**, BNP Paribas, London, six months off-cycle internship

Education

- 2019-2022 **PhD, Applied Mathematics**, Institut Polytechnique de Paris, Palaiseau
- 2015-2019 **“Élève-normalien” (recruited on competitive exam) at École Normale Supérieure Paris-Saclay**, ENS Paris-Saclay (formerly ENS Cachan), Cachan
- 2018 **MSc Probability and Finance, Applied Mathematics**, École polytechnique/Sorbonne université, Paris
- 2016 **BSc, Mathematics**, ENS Paris-Saclay and Université Paris-Diderot, Paris

Grants

- 2025 **Recipient of the PEPS JCJC (French national center for scientific research) funding**, Project “Optimal stopping and systems of interacting agent”, 6,000€

Academic visits

- May. 2025 **ETH Zürich, Zürich**, invited by Dylan Possamaï (FIM guest)
- Apr. 2025 **NYU Shanghai, Shanghai**, Invited by Mathieu Laurière
- Mar. 2025 **New York University, New York**, Invited by Nizar Touzi
- Feb. 2024 **ETH Zürich, Zürich**, invited by Dylan Possamaï
- Jul. 2023 **University of California, Berkeley, Berkeley**, invited by Thibaut Mastrolia
- 2018-2019 **University of Southern California, Los Angeles**, one year pre-doctoral research internship, part of my degree at ENS Paris-Saclay, Invited and supervised by Jianfeng Zhang

Scientific activities

Preprints

8. Talbi, M. & Touzi, N. Itô-Wentzell formulas for semimartingale conditional laws with applications to mean-field control. *Preprint ArXiv:2510.00242* (2025).
7. Khabou, M. & Talbi, M. Markov approximation for controlled Hawkes Jump-Diffusions with general kernels. *Preprint ArXiv:2507.11294* (2025).
6. Possamaï, D. & Talbi, M. Optimal control of Volterra-integral diffusions and application to contract theory. *Preprint ArXiv:2511.09701* (2025).

Accepted papers

5. Possamai, D. & Talbi, M. Mean field games of optimal stopping: master equation and weak equilibria. *Applied Mathematics and Optimization* (to appear).
4. Talbi, M. A finite-dimensional approximation for partial differential equations on Wasserstein space. *Stochastic Processes and their Applications* **177**, 104445 (2024).
3. Talbi, M., Touzi, N. & Zhang, J. From finite population optimal stopping to mean field optimal stopping. *Annals of Applied Probability* **34**, 4237–4267 (2024).
2. Talbi, M., Touzi, N. & Zhang, J. Viscosity solutions for obstacle problems on Wasserstein space. *SIAM Journal on Control and Optimization* **61**, 1712–1736 (2023).
1. Talbi, M., Touzi, N. & Zhang, J. Dynamic programming equation for the mean field optimal stopping problem. *SIAM Journal on Control and Optimization* **61**, 2140–2164 (2023).

Talks in international conferences and workshops

- Nov. 2025 9th London-Paris Bachelier Workshop, London, United Kingdom
- Sep. 2025 Stochastic and Computational Finance, Lisbon, Portugal.
- Jul. 2025 SIAM Conference on Financial Mathematics and Engineering, Miami, United States.
- Apr. 2025 Workshop on Mean Field Games, Optimal Control, and Machine Learning, Shanghai, China.
- Aug. 2024 Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum, Germany.
- Jul. 2024 12th Bachelier World Congress, Rio de Janeiro, Brazil.
- Jun. 2024 BIRS workshop on New Trends and Challenges in Stochastic Differential Games, Kelowna, Canada.
- Jan. 2024 23rd annual Society for the Advancement of Economic Theory conference, Santiago, Chile.
- Aug. 2023 10th International Congress on Industrial and Applied Mathematics, Tokyo, Japan.
- Jun. 2023 11th General AMaMeF Conference, Bielefeld, Germany.
- Jun. 2023 SIAM Conference on Financial Mathematics and Engineering, Philadelphia, United States.
- May. 2023 BIRS workshop on Applications of Stochastic control to Economics and Finance, Banff, Canada.
- Apr. 2023 Workshop on Stochastic control and Risk, Hammamet, Tunisia.
- Mar. 2023 16th German Probability and Statistics Days, Essen, Germany.
- Jan. 2023 15th Bachelier colloquium in mathematical finance and stochastic calculus, Métabief, France.
- Jun. 2022 9th colloquium on BSDEs and mean field systems, Annecy, France.
- Aug. 2021 6th Berlin workshop for Young Researchers in mathematical finance, online.
- Jun. 2021 Summer school on Distributed Control: Decentralization and Incentives, Luminy, France.
- Sep. 2020 13th European Summer School in financial mathematics, Vienna, Austria.

Talks in seminars

- Dec. 2024 Probability seminar, École polytechnique, Palaiseau, France.
- Oct. 2024 Mathematical finance colloquium, University of Southern California, Los Angeles, United States.
- Aug. 2024 Financial mathematics seminar, UC Berkeley, Berkeley, United States.
- Apr. 2024 Financial mathematics seminar, Princeton University, Princeton, United States.
- Mar. 2024 GT Méthodes stochastiques et finances, Écoles des Ponts, Champs-sur-Marne, France.
- Feb. 2024 Seminar in financial and insurance mathematics, ETH Zürich, Zürich, Switzerland.
- Nov. 2023 Bachelier seminar, Institut Henri Poincaré, Paris, France.
- Oct. 2023 Seminar Mathrisk Inria-LPSM, Inria Paris, Paris, France.
- Jun. 2023 Mathematical finance seminar, Humboldt Universität, Berlin, Germany.
- Mar. 2023 LPSM financial and actuarial mathematics seminar, Sorbonne Université, Paris, France.
- Dec. 2022 Seminar in financial and insurance mathematics, ETH Zürich, Zürich, Switzerland.

- Jan. 2022 Seminar in financial & actuarial mathematics, University of Michigan, online.
- Oct. 2021 PhD seminar in mathematical finance, Sorbonne Université, Paris, France.
- Apr. 2021 GT Modèles stochastiques en finance, École polytechnique, Palaiseau, France.

Referee activities

Invited reviewer for: *Annals of Applied Probability*, *Annales de l'Institut Henri Poincaré*, *Applied Mathematics and Optimization*, *Journal of Optimization Theory and Applications*, *Transactions of the AMS*, *SIAM Journal on Control and Optimization*, *Stochastic Processes and their Applications*, *Mathematical Control and Related Fields*, *ESAIM: Control, Optimisation and Calculus of Variations*

Teaching activities

Classes

- 2025-present Fundamentals of derivatives modeling (Université Paris-Cité, MSc): teaching assistant.
- 2024-present Stochastic control in finance (Université Paris-Cité, MSc) : lecturer.
- 2023-present Mathematical finance (Université Paris-Cité, MSc): teaching assistant.
- 2023-present Monte Carlo methods for finance (Université Paris-Cité, MSc): teaching assistant.
- 2023-present Actuarial science (Université Paris-Cité, MSc): teaching assistant.
- 2023-2024 Fundamental analysis and algebra (Université Paris-Cité, BSc): teaching assistant.
- 2022-2023 Mathematical finance and stochastic calculus (ETH Zürich, MSc): surrogate lecturer.
- 2020-2022 Introduction to Python (École polytechnique, MSc): teaching assistant.
- 2019-2022 Stochastic calculus in finance (École polytechnique, MSc): teaching assistant for Python sessions.
- 2019-2022 Introduction to statistics (École polytechnique, BSc): teaching assistant.

Supervised students

Supervision of research internships (Master): Augustin Michel (2025, Université Paris-Cité), Baran Celik (2025, ESPCI).

Supervision of the Bachelor theses (École polytechnique) of: Martin Ponchon (2020), Anaëlle Touré (2020), Diego Gomez (2021), Makram Loughman (2021), Reine Dayekh (2022), Ahmed Wakrim (2022).

Support classes

- 2016-2017 Support classes in mathematics and physics at Institut Villebon-Chapark, Université Paris-Sud.

Languages

- French** Mother tongue
- English** Full professional working proficiency
- German** Elementary proficiency

Programming skills

Mainly Python (including Tensorflow for deep learning methods), some notions in C++.