Mehdi Christian Talbi

Curriculum Vitae

Université Paris-Cité
Laboratoire de Probabilités, Statistiques et Modélisation
8 Place Aurélie Nemours, 75013 Paris, France
talbi@lpsm.paris

Research interests

Stochastic control, mean field games, contract theory, backward SDEs, mathematical finance, numerics...

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

Academic visits

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

Education

2019-2022 **PhD, Applied Mathematics**, *Institut Polytechnique de Paris*, Palaiseau
Subject: Mean field optimal stopping. Supervised by Nizar Touzi & Jianfeng Zhang.

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

Scientific activities

Preprints

5. Possamaï, D. & Talbi, M. Mean field games of optimal stopping: master equation and weak equilibria. *ArXiv:2307.09278* (2023).

Accepted papers

4. Talbi, M. A finite-dimensional approximation for partial differential equations on Wasserstein space. *Stochastic Processes and their Applications* (to appear).

3. Talbi, M., Touzi, N. & Zhang, J. From finite population optimal stopping to mean field optimal stopping. *Annals of Applied Probability* (to appear).

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

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

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

2023-2024 Mathematical finance (Université Paris-Cité, MSc): teaching assistant
2023-2024 Monte Carlo methods for finance (Université Paris-Cité, MSc): teaching assistant
2023-2024 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 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++.