

Mehdi Christian Talbi

Curriculum Vitae

ETH Zürich
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✉ mehdi.talbi@math.ethz.ch

Research interests

Mean field optimal stopping & control, mean field games, contract theory, backward SDEs, mathematical finance, numerics...

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”** 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.

Experience

- 2022-present **Postdoctoral researcher**, *ETH Zürich*, Zürich.
- 2019-2022 **PhD student and teaching assistant**, *École polytechnique*, Palaiseau.
- 2018-2019 **Visiting student**, *University of Southern California*, Los Angeles, one year pre-doctoral research internship, part of my degree at ENS Paris-Saclay. Supervised by Jianfeng Zhang.
- 2018 **Quantitative analyst intern**, *BNP Paribas*, London, six months off-cycle internship.
- 2017 **Research intern**, *Inria Grand-Est*, Nancy, four months research internship.

Scientific activities

Preprints

4. Talbi, M. A finite-dimensional approximation for partial differential equations on Wasserstein space. *ArXiv:2211.00719* (2022).
3. Talbi, M., Touzi, N. & Zhang, J. From finite population optimal stopping to mean field optimal stopping. *ArXiv:2210.16004* (2022).
2. Talbi, M., Touzi, N. & Zhang, J. Dynamic programming equation for the mean field optimal stopping problem. *ArXiv:2103.05736 (in revision for SIAM Journal on Control and Optimization)* (2021).

Accepted papers

1. Talbi, M., Touzi, N. & Zhang, J. Viscosity solutions for obstacle problems on Wasserstein space. *SIAM Journal on Control and Optimization*, accepted (in minor revision) (2022).

Selected talks

- Dec. 2022 Seminar in financial and insurance mathematics, ETH Zürich.
- Jun. 2022 9th colloquium on BSDEs and mean field systems, Annecy. Contributory talk.
- Jan. 2022 Seminar in financial & actuarial mathematics, University of Michigan, online.
- Oct. 2021 PhD seminar in mathematical finance, Sorbonne Université, Paris.

- Aug. 2021 6th Berlin workshop for Young Researchers in mathematical finance, online. Contributory talk.
- Jun. 2021 Summer school on Distributed Control: Decentralization and Incentives, Luminy. Contributory talk.
- Apr. 2021 GT Modèles stochastiques en finance, École polytechnique, Palaiseau.
- Sep. 2020 13th European Summer School in financial mathematics, Vienna. Contributory talk.

Referee activities

Invited reviewer for: *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

- 2020-2022 Introduction to Python (École polytechnique, MAP361P): teaching assistant.
- 2019-2022 Stochastic calculus in finance (École polytechnique, MAP552): teaching assistant for Python sessions.
- 2019-2022 Introduction to statistics (École polytechnique, MAA204): 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++.

Reference writers

Nizar Touzi, Professor at École polytechnique, nizar.touzi@polytechnique.edu

Jianfeng Zhang, Professor at University of Southern California, jianfenz@usc.edu

Thibaut Mastrolia, Tenure-track assistant professor at UC Berkeley, mastrolia@berkeley.edu