Mehdi Christian Talbi

Curriculum Vitae

ETH Zürich
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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

Publications and 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* (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.*

Selected talks

Jan. 2023 15th Bachelier colloquium in mathematical finance and stochastic calculus, Métabief.

Dec. 2022 Seminar in financial and insurance mathematics, ETH Zürich.

Jun. 2022 9th colloquium on BSDEs and mean field systems, Annecy.

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.

Jun. 2021 Summer school on Distributed Control: Decentralization and Incentives, Luminy.

Apr. 2021 GT Modèles stochastiques en finance, École polytechnique, Palaiseau.

Sep. 2020 13th European Summer School in financial mathematics, Vienna.

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++.