Oct 9th , 2022

Jiacheng Zhang

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EMPLOYMENT

Postdoctoral Researcher, Industrial Engineering & Operations Research Department 2021-present
UC Berkeley, under the supervision of Professor Xin Guo

EDUCATION

PhD, Operations Research and Financial Engineering 2016 - 2021
Princeton University, under the supervision of Professor Mykhaylo Shkolnikov and Professor Daniel Lacker
Bachelor, Pure and Applied Mathematics 2012 - 2016
Tsinghua University

HONORS & REWARDS

School of Engineering and Applied Science Award for Excellence 2021
This award is given to SEAS advanced graduate students who have performed at the highest level as scholars and researchers
Member of Tsinghua Xuetang Training Program for excellence in academy 2012 - 2016
National Scholarship 2012 - 2013

RESEARCH ARTICLES

"Dynamics of observables in rank-based models and performance of functionally generated portfolios" (2018)
Joint work with Sergio A. Almada Monter and Mykhaylo Shkolnikov. *Annals of Applied Probability* **29, 2849-2883.**
"Inverting the Markovian projection, with an application to local stochastic volatility models" (2019)
Joint work with Daniel Lacker and Mykhaylo Shkolnikov. *Annals of Probability.* **48**, 2189-2211.
"Superposition and mimicking theorem for conditional McKean-Vlasov equations" (2020)
Joint work with Daniel Lacker and Mykhaylo Shkolnikov. *To appear in Journal of the European Mathematical Society.* Preprint available at *https://arxiv.org/abs/2004.0009*
"Stationary solutions and local equations for interacting diffusions on regular trees" (2021)
Joint work with Daniel Lacker. *Submitted.* Preprint available at *https://arxiv.org/abs/2111.05416*
"Agency problem and mean field system of agents with moral hazard, synergistic effects and accidents"(2022)
Joint work with Thibaut Mastrolia. *Submitted.* Preprint available at *https://arxiv.org/abs/2207.11087*
"Optimization frameworks and sensitivity analysis of Stackelberg mean-field game"
Joint work with Xin Guo and Anran Hu. In preparation
"Sharp interface limit for the Giacomin-Lebowitz model of phase segregation"
Joint work with Sergey Nadtochiy and Mykhaylo Shkolnikov. In preparation.

RESEARCH TALKS & PRESENTATIONS

Dynamics of observables in rank-based models and performance of functionally generated portfolios
11th Oxford Princeton Workshop on Financial Mathematics and Stochastic Analysis, Princeton University, November 2018.
Stationary stochastic local volatility
SIAM Conference on Financial Mathematics & Engineering (FM19), University of Toronto, June 2019.
Inverting the Markovian Projection with an Application to Local Stochastic Volatility Models
Seminar talk in the Department of Applied Mathematics, the Hong Kong Polytechnic University, August 2019,
4th Eastern Conference on Mathematical Finance, October 2019.
Superposition and mimicking theorem for conditional McKean-Vlasov equations

Columbia-Princeton Probability Day 2021], May 2021

SIAM Conference on Financial Mathematics & Engineering (FM21), Virtual Conference, June 2021,

6th Berlin Workshop for Young Researchers on Mathematical Finance, Aug 2021.

SIAM Annul Meeting (AN22), Virtual Conference, July 2022

Topics in Mckean-Vlasov equations and mimicking theorem

CMU Probability/Math Finance Seminar, Jan 2021.

Berkeley IEOR Seminar, Feb 2021.

Sharp interface limit for the Giacomin-Lebowitz model of phase segregation

Princeton Graduate Student Seminar, October 2020.

Columbia Stochastic Partial Differential Equations Seminar(virtual), November 2020,

Applied math and Probability seminar at Stanford University, January 2021.

Locally interacting diffusions and continuous Gibbs measures on trees

Northeast Probability Seminar, November 2020.

Seminar at Center for Math Financial and Actuarial Science at University of California, Santa Barbara, April 2022.

Optimal transport and Mean field games Seminar at University of South Carolina, May 2022.

Sensitivity and Robustness of Stackelberg Mean-Field Games

Mean field game workshop at CRM, Montreal, May 2022.

Machine learning and mean field games at IMSI, Chicago, May 2022.

Topics on Stackelberg Mean-Field Games

Quantitative Finance Seminar NUS(Suzhou) Research Institute, Aug 2022.

Financial Mathematicsl Seminar, Princeton University, Sept 2022.

Applied probability seminar, Columbia University, Sept 2022.

Brownbag seminar, Boston University, Sept 2022.

TEACHING EXPERIENCE

Princeton University (Assistant in Instruction) 2016 - 2021

Probability and Stochastic Systems (ORF 309, three times), Stochastic Calculus (ORF 527, three times), Probability theory (ORF526, once)

UC Berkeley (Teaching Assistant) 2021 - 2022

Fintech2021, Financial Engineering Systems II (Fall 2021)

UC Berkeley 2021 - 2022

Applied Stochastic Process II (Spring 2022)

PROFESSIONAL ACTIVITIES

Referee for the SIAM Journal on Financial Mathematics, Latin American Journal of Probability and Mathematical Statistics, the book of ‘Machine learning in Financial Marker: A guide contemporary practices’, Digital Finance, Applied Mathematics and Optimization, Annals of Applied Probability,