

# Jiacheng Zhang

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## EMPLOYMENT

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

## EDUCATION

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**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

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**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 Xuetaang Training Program for excellence in academy** 2012 - 2016  
**National Scholarship** 2012 - 2013

## RESEARCH ARTICLES

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**“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.  
**“Stationary solutions and local equations for interacting diffusions on regular trees” (2021)**  
Joint work with Daniel Lacker. *To appear in Journal of the European Mathematical Society*. 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>  
**“Sharp interface limit for the Giacomini-Lebowitz model of phase segregation”**  
Joint work with Sergey Nadtochiy and Mykhaylo Shkolnikov. In preparation.  
**“Sensitivity and Robustness of Stackelberg Mean-Field Games”**  
Joint work with Xin Guo and Anran Hu. In preparation

## RESEARCH TALKS & PRESENTATIONS

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**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**

SIAM Conference on Financial Mathematics & Engineering (FM21), Virtual Conference, June 2021,  
6th Berlin Workshop for Young Researchers on Mathematical Finance, Aug 2021.  
SIAM Annual Meeting (AN22), Virtual Conference, July 2022

**Sharp interface limit for the Giacomini-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.

**TEACHING EXPERIENCE**

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<b>Princeton University (Assistant in Instruction)</b>	2016 - 2021
Probability and Stochastic Systems (ORF 309, three times), Stochastic Calculus (ORF 527, three times), Probability theory (ORF526, once)	
<b>UC Berkeley (Teaching Assistant)</b>	2021 - present
Fintech2021, Financial Engineering Systems II (Fall 2021)	
<b>UC Berkeley</b>	2021 - present
Applied Stochastic Process II (Spring 2022)	

**PROFESSIONAL ACTIVITIES**

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