## Liang DING

**Contact**

School of Data Science
Fudan University
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**Interests**

High-Dimensional Simulation Optimization, Gaussian Processes, Statistical Learning.

**Appointment**

**Fudan University**, Shanghai

Assistant Professor in School of Data Science — Feb 2023-present

**Hong Kong University**, Hong Kong, China

Senior Research Associate in Business School — Oct 2022-Feb 2023
Host: Xiaowei Zhang

**Texas A&M University**, College Station, TX

Postdoctoral Fellow in Industrial & Systems Engineering — Oct 2019-July 2022
Host: Prof. Rui Tuo
Joint Postdoctoral Fellow in TAMIDS — Oct 2020-Sept 2021
Host: Prof. Shahin Shahrampour

**Georgia Institute of Technology**, Atlanta, GA

Visiting Scholar in Industrial & Systems Engineering — March 2018-Oct 2019
Host: Prof. C. F. Jeff Wu

**Education**

**Hong Kong University of Science and Technology**, Hong Kong, China

Ph.D., Operations Research — Nov 2019

- Hong Kong PhD Fellowship Scheme (HKPFS)
- Advisor: Prof. Xiaowei Zhang
- Thesis : "Scalable Modeling and Computation for High Dimensional Gaussian Processes"

**University of Toronto**, Toronto, ON, Canada

B.S., Double Major: Applied Mathematics & Computer Science — Jun 2015

- The Prince of Wales Prize in Mathematics (Top 1 in Math Major)
- Provost's Scholar (Top 50 in College)

**Publications**

*1. A Sparse Expansion for Deep Gaussian Processes*
- **Liang Ding**, Rui Tuo, Shahin Shahrampour
- *IISE Transactions*, accepted

*2. Sample and Computationally Efficient Simulation Metamodeling in High Dimensions*
- **Liang Ding**, Xiaowei Zhang
- *Operations Research*, Forthcoming

*3. Kernel Packet: An Exact and Scalable Solver for Gaussian Process Regression with Matérn Correlations*
- Haoyuan Chen, **Liang Ding**, Rui Tuo (The first two authors contribute equally)
- *Journal of Machine Learning Research* , 23(127): 1-32, 2022

4. *Knowledge Gradient for Selection with Covariates: Consistency and Computation*
- **Liang Ding**, L. Jeff Hong, Haihui Shen, Xiaowei Zhang
- *Naval Research Logistics*, 69(3):496–507

5. *Generalization Guarantees for Sparse Kernel Approximation with Entropic Optimal Features*
- **Liang Ding**, Rui Tuo, Shahin Shahrampour
- *International Conference on Machine Learning (ICML),* 2020, 2875-2884

6. *Sequential Sampling for Bayesian Robust Ranking and Selection*
- Xiaowei Zhang, **Liang Ding**
- *Proceedings of the 2016 Winter Simulation Conference*, 2016, 758-769

**Under Review**

1. *mcGP: Mesh-Clustered Gaussian Process Emulator for PDE systems*
- Chih-Li Sung, Wnenjia Wang, **Liang Ding**, Xingjian Wang
- Submitted to *Technometrics*

**Working Papers**

1. *Adaptive Learning with Random Smoothing Kernel Hilbert Spaces*
- **Liang Ding**, Tianyang Hu, Jiahang Jiang, Donghao Li, Wenjia Wang, Yuan Yao
- Ready to submit

2. *Representing additive Gaussian Processes by Sparse Matrices*
- Lu Zou, Haoyuan Chen **Liang Ding**
- Ready to submit

3. *High-Dimensional Simulation Optimization via Brownian Fields on Sparse Grids*
- **Liang Ding**, Rui Tuo, Xiaowei Zhang
- *arXiv*: 2107.08595

4. *High-Dimensional Non-Parametric Density Estimation in Mixed Sobolev Spaces*
- **Liang Ding** Wenjia Wang, Lu Zou, Rui Tuo, Shahin Shahrampour
- *arXiv*: 2006.03696

5. *BdryGP: a new Gaussian process model for incorporating boundary information*
- **Liang Ding**, Simon Mak, C. F. Jeff Wu
- *arXiv:* 1908.08868
- Finalist, 2019 WuFest Best Poster Award

**Talks**

- *IOS 2022*, Section on Algorithms in Global Optimization
- *TAMIDS 2021 Research Conference*, TAMIDS Post-doc Program
- *INFORMS Annual Meeting 2020*, Section on Experimental Design
- *INFORMS Annual Meeting 2019*, Section on Experimental Design
- *IMS/ASA Spring Research Conference 2019*, Section on Design and Analysis
- *INFORMS Winter Simulation Conference 2016*, Section on Ranking and Selection

**Teaching**

**Texas A&M University**, Texas, U.S.

*Teaching Assistant*

- ISEN619 Analysis and Prediction

**Hong Kong University of Science and Technology**, Hong Kong, China

*Teaching Assistant*

- IEDA 4130 - System Simulation
- IEDA 3010 - Operations Research I