

# Shunan Jiang

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## EDUCATION

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### University of California, Berkeley

2019/08 - present

- PhD Candidate in Operations Research, GPA 3.9/4.0
- Advisor: Prof. Zuo-jun Max Shen

### The Chinese University of Hong Kong, Shenzhen

2015/08 - 2019/05

- BS in Computer Science and Engineering; Graduated with First Class Honours
- Undergrad Research Advisor: Prof. Zhi-quan Tom Luo

## RESEARCH/INTERN EXPERIENCE

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### Dynamic On-demand Vehicle Repositioning

2021/09 - 2022/09

*Research Assistant, UC Berkeley*

*Supervisor: Prof. Max Shen*

- Modeled the on-demand vehicle repositioning problem as a Markov decision process (MDP).
- Proposed a novel base-stock repositioning policy and proved its asymptotic optimality under the offline average cost setting.
- Developed an online learning bandit algorithm for repositioning the vehicles under censored demand and proved that it has a sublinear regret with respect to the optimal base-stock repositioning policy.
- Conducted experiments on a real-life dataset and demonstrated the effectiveness of the bandit algorithm.

### Sensor Signal Processing Optimization

2017/06 - 2018/06

*Research Intern, Shenzhen Research Institute of Big Data*

*Supervisor: Prof. Zhi-Quan Luo*

- Developed and validated a novel sensor registration strategy for estimating sensor biases from asynchronous measurements.
- Proposed a nonlinear least squares (LS) formulation for eliminating the need for target states and developed a block coordinate descent (BCD) scheme with semidefinite relaxation.
- Implemented the algorithms; experiment results exhibited nearly zero optimality gap.
- Delivered a rigorous proof concerning the solution's optimality in a noise-free case.

### Large Scale Dataset Establishment and Image Classification

2017/12 - 2018/03

*Research Intern, SenseTime Group Ltd., Shenzhen*

*Supervisor: Prof. Luo Ping*

- Built a clothing image dataset with 5M+ data points; individual contributions include:
  - Data crawling, pre-processing, cleaning and labelling.
  - Task-dependent dataset annotation, covering attribute prediction, key point detection, and customer-to-shop clothes matching.
- Conducted image classification with deep learning models
  - Introduced inter-layer memory to ResNet neural network for enabling the memorization of information during testing.
  - Leveraged ImageNet data to train, validate and test the developed model; obtained favorable results.

- Developed a WeChat-based campus card system and an associated MiniApp which unifies permissions and payments management while providing miscellaneous functions, including schedule management, sharing of announcements and news.
- Systematically practiced the software engineering workflow, including requirement identification, design, implementation, testing, and maintenance.
- Deployed and accumulated 4K+ on-campus users within six months; innovation and technical merit acknowledged by a “Digital Star” award from Tencent WeChat.

## SELECTED AWARDS

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2021	Outstanding Graduate Student Instructor Award (top 10% of the dept.)	UC Berkeley
2019	Berkeley Fellowship	UC Berkeley
2017-2018	Undergraduate Research Award	CUHK(SZ)
2016-2018	1st Rank Academic Scholarship (top 0.6% of the dept.)	CUHK(SZ)
2016-2018	Dean's List (top 10% of the dept.)	CUHK(SZ)
2017	National Scholarship (top 0.02% of the school)	Ministry of Education of the PRC
2017	Tencent WeChat Campus Card “Digital Star”	Tencent

## PAPERS

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- **Shunan Jiang**, Wenqiang Pu, Zhi-quan Luo. Optimal Asynchronous Multi-sensor Registration In 3 Dimensions. *IEEE GlobalSIP 2018*. [\[Link\]](#)
- **Shunan Jiang\***, Hansheng Jiang\*, Zuo-jun Max Shen. Learning While Repositioning in On-Demand Vehicle Sharing Systems. In preparation for submission to *Management Science*. [\[Link\]](#)
- **Shunan Jiang**, Meng Qi, Zeyu Zheng, Zuo-jun Max Shen. Learning Newsvendor Problem in a Growing Environment. In preparation.
- **Shunan Jiang\***, Guo Gang\*, Zuo-jun Max Shen. Platform Cold Start Design: A Structural Online Learning Approach. In preparation.

\* indicates equal contribution.

## TALKS

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- Learning While Repositioning in On-Demand Vehicle Sharing Systems. Oral presentation: Informs Annual Meeting, Indianapolis, IN, 2022.
- Optimal Asynchronous Multi-sensor Registration In 3 Dimensions. Oral presentation: IEEE GlobalSIP, Anaheim, CA, 2018.

## SKILLS

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Programming	C/C++, Python, Julia, MATLAB, R, AMPL, MySQL, JavaScript, HTML, CSS
Model/Algorithm	Operations Management, Optimization, Stochastic Processes, Machine Learning, Deep Learning, Reinforcement Learning, Game Theory
Languages	English, Mandarin