

# XIAOQUAN GAO

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## EDUCATION

### Purdue University

*Ph.D. in Industrial Engineering*

**Advisors:** Nan Kong, Pengyi Shi, Paul Griffin

**Dissertation Title:** Improving Care Access to Mitigate the Impact of Opioid Crisis

West Lafayette, IN, USA

*Aug. 2019 – May. 2024*

### Peking University

*B.S. in Theoretical and Applied Mechanics*

**Advisor:** Jie Song

Beijing, China

*Sep. 2015 – July. 2019*

## RESEARCH INTERESTS

- Healthcare Analytics, Public Service Operations, Stochastic Modeling, Reinforcement Learning

## WORKING PAPERS

- Xiaoquan Gao**, Pengyi Shi, and Nan Kong. Breaking the vicious cycle of reincarceration: community corrections placement with an MDP Approach. Working Paper.
  - First place, Outstanding Innovation in Service Systems Engineering Award, IISE (2023)
- Xiaoquan Gao**, Griffin Carter, Pengyi Shi, and Nicole Adams. Implementation of interpretable placement decision support in community corrections. Working Paper.
- Xiaoquan Gao**, Nan Kong, and Paul M. Griffin. Shortening emergency medical response time with joint operations of UAVs with ambulances. Second Round Revision at *Manufacturing & Service Operations Management*.

## PUBLICATIONS

- Xiaoquan Gao**, Sabriya Alam, Pengyi Shi, Franklin Dexter, and Nan Kong. Interpretable machine learning models to predict hospital patient readmission. Accepted at *BMC Medical Informatics and Decision Making*.
- Xiaoquan Gao**, Jianpei Wen, and Jie Song. "Capacity allocation and revenue sharing in healthcare alliances." *Flexible Services and Manufacturing Journal* 32.4 (2020): 829-851.

## CONFERENCE PROCEEDINGS

- Nan Kong and Juan C. Paz and **Xiaoquan Gao**. "EMS operations management: simulation, optimization, and new service models" 2022 *Winter Simulation Conference (WSC)*. IEEE, 2022.
- Xiaoquan Gao**, Nan Kong, and Paul M. Griffin. "Dynamic optimization of drone dispatch for substance overdose rescue." 2020 *Winter Simulation Conference (WSC)*. IEEE, 2020.
- Xiaoquan Gao**, Jianpei Wen, and Jie Song. "Simulation study of revenue sharing in healthcare alliances." 2018 *winter simulation conference (WSC)*. IEEE, 2018.

## SELECTED AWARDS AND HONORS

First place, Outstanding Innovation in Service Systems Engineering Award, IISE	2023
Purdue Graduate Student Government Travel Grant (Two Times), Purdue University	2023
Bilsland Dissertation Fellowship, Department of Industrial Engineering, Purdue University	2023
IISE Future Faculty Fellow, IISE	2022
A. H. Ismail Interdisciplinary Program Doctoral Research Travel Award, Purdue University	2022
Outstanding Undergraduate Research, Peking University	2019
Weilin Scholarship and Merit Student, Peking University	2018
Boeing Scholarship and Merit Student, Peking University	2016

## TEACHING AND RESEARCH MENTORING

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- **Course: Health Care Data Science**, Fall 2023, Purdue University
  - Help develop course syllabus, prepare lecture slides, and create handouts
  - Deliver guest lectures for two weeks, including four lectures and two recitation sessions (Scheduled for Aug 28 - Sep 8, 2023)
- **Mentor** a Purdue Aeronautics and Astronautics Engineering master student: develop a user interface to visualize occupancy trends and crime rate forecasting and work on a paper together
- **Mentor** a Purdue Industrial Engineering undergraduate student: investigate the treatment fairness with respect to race and gender based on NYC Hanes Database
- **Mentored** a Purdue Electrical and Computer Engineering undergraduate student: built interpretable machine learning models for hospital readmission prediction and submitted a paper together

## CONFERENCE PRESENTATIONS

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1. "Breaking the Vicious Cycle: Community Corrections Placement Support with an MDP Approach"
  - INFORMS Healthcare Conference, Toronto, ON Canada, 2023 (Scheduled)
  - MSOM Annual Meeting, Montreal, QC, 2023 (Scheduled)
  - POMS Annual Meeting, Orlando, FL, 2023 (Scheduled)
  - IIE Annual Conference, New Orleans, LA, 2023 (Scheduled)
  - INFORMS Annual Meeting, Indianapolis, IN, 2022
  - M&SOM Annual Meeting, Munich, Germany, 2022
  - POMS Annual Meeting, Virtual, 2022
2. "Shortening emergency medical response time with joint operations of UAVs with ambulances"
  - INFORMS Healthcare Conference, Toronto, ON Canada, 2023 (Scheduled)
  - Winter Simulation Conference, Singapore, 2022
  - POMS Annual Meeting, Virtual, 2022
  - INFORMS Annual Meeting, Virtual, 2021
  - Winter Simulation Conference, Virtual, 2020
  - INFORMS Annual Meeting, Virtual, 2020
3. "Capacity Allocation and Revenue Sharing in Healthcare Alliances"
  - Winter Simulation Conference, Gothenburg, Sweden, 2018
  - International Conference of the Chinese Scholars Association for Management Science and Engineering (CSAMSE), Ningbo, China, 2018

## SERVICES

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**Volunteer:** Student monitor for INFORMS Healthcare Conference 2021

**Session Chairs:** WSC 2020; POMS 2022, 2023; INFORMS Healthcare 2023

**Reviewer:** Health Care Management Science, IEEE Robotics and Automation Letters, IIE Transactions on Healthcare Systems Engineering, Flexible Services and Manufacturing Journal, IEEE International Conference on Automation Science and Engineering (CASE) 2020 and 2022