

# Yunzhe (Aaron) Qiu

Address: One Brookings Drive, Campus Box 1156, Saint Louis, MO 63130

Email: qiuyunzhe@wustl.edu

Mobile: +1-314-296-0891

Website: <https://www.qiuyunzhe.com>

## EDUCATION

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- **Olin Business School, Washington University in St. Louis** St. Louis, MO  
Ph.D. in Supply Chain, Operations, and Technology July 2016 - Present  
Thesis: The Application of Dynamic Models in Operations Management  
Advisor: Panos Kouvelis
- **Peking University** Beijing, China  
M.S. in Industrial Engineering and Management July 2013 - June 2016  
Thesis: Simulation Optimization on the Patient Flow in the Urban Hierarchical Healthcare System  
Advisor: Jie Song
- **Tsinghua University** Beijing, China  
B.S. in Industrial Engineering July 2009 - June 2013

## RESEARCH INTERESTS

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- **Topic Interests:**
  - **Interface of Finance, Operations, and Risk Management:** Supply Chain Finance, Hedging, FinTech
  - **Supply Chain Management:** Agricultural, Information Asymmetry, Inventory Management
  - **Technology and Innovation:** Blockchain Application, Assets Tokenization, ICO
- **Methodology Interests:**
  - **Dynamic Program:** Markov Decision Process, Approximate Dynamic Program
  - **Business Analytics:** Predictive Prescription, Machine Learning, Time Series Model, Metaheuristics
  - **Simulation Optimization:** Multi-Agent Simulation, Ranking & Selection, Multi-Fidelity Model

## PUBLICATIONS

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- **Financing Inventories with an Investment Efficiency Objective: ROI-Maximizing Newsvendor, Bank Loans and Trade Credit Contracts:** Accepted, *International Journal of Production Research*, with Panos Kouvelis.
- **Multi-Fidelity Sampling for Efficient Simulation-Based Decision Making in Manufacturing Management:** *IIEE Transactions*, 2019, 51(7): 792-805, with Jie Song, Jie Xu, Feng Yang
- **A Simulation Optimisation on the Hierarchical Health Care Delivery System Patient Flow Based on Multi-Fidelity Models:** *International Journal of Production Research*, 2016, 54(21): 6478-6493, with Jie Song, Zekun Liu
- **A Real-Time Access Control of Patient Service in The Outpatient Clinic:** *IEEE Transactions on Automation Science and Engineering*, 2016, 14(2): 758-771, with Jie Song, Zekun Liu
- **Integrating Optimal Simulation Budget Allocation and Genetic Algorithm to Find the Approximate Pareto Patient Flow Distribution:** *IEEE Transactions on Automation Science and Engineering*, 2015, 13(1): 149-159, with Jie Song, Zekun Liu

## WORKING PAPERS

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- **Blockchain-Enabled Deep-Tier Supply Chain Finance:** Major revision, *Manufacturing & Service Operations Management*, with Lingxiu Dong, Fasheng Xu. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.3776953>
- **Managing Operations of a Hog Farm Facing Volatile Markets: Inventory and Selling Strategies:** Under review, *Manufacturing & Service Operations Management*. with Panos Kouvelis, Ye Liu, Danko Turcic. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.3912801>
- **Data-Driven Agriculture Network Optimization: A Predictive Prescriptive Dynamic Programming Approach:** Under review, *Manufacturing & Service Operations Management*, with Seung-Hwan Jung.
- **Buying Frenzy with Resale Market: Operational Strategies under Social Externality:** Resubmitted, *Production and Operations Management*. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.3820272>
- **The Tokenvendor Problem: Tokenizing Cargo Reservations under Overbooking and No-Shows:** In preparation for submission, with Jake Feldman, Panos Kouvelis, Fasheng Xu.

## TEACHING INTERESTS

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- **Business Analytics – Supply Chain Analytics:** Undergraduate & Master
- **Statistical Learning or Machine Learning (Python, R, or Matlab):** Undergraduate & Master
- **Supply Chain Finance and FinTech Innovations:** Master
- **Cryptocurrency and Blockchain:** Master
- **Operations Management:** Undergraduate & Master
- **Risk Management:** Undergraduate & Master
- **Dynamic Program and Stochastic Optimization:** Doctoral

## TEACHING EXPERIENCE

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- **Supply Chain Analytics Capstone** MS in Supply Chain Analytics, Olin Business School, WashU  
Co-Designer and Teaching Assistant Fall 2019 - 2021  
**Instructor:** Panos Kouvelis  
Designed and selected case studies
- **Supply Chain Finance** MBA & MS in Supply Chain Management, Olin Business School, WashU  
Co-Designer and Teaching Assistant Spring 2019 - 2021  
**Instructor:** Panos Kouvelis  
Designed the simulation game
- **Stochastic Models for Production and Service Systems** Ph.D., Olin Business School, WashU  
Guest Lecturer and Teaching Assistant Spring 2018 - 2020  
**Instructor:** Panos Kouvelis  
**Lecture Topic:** Theory of Open and Closed Queuing Networks

## RESEARCH PRESENTATIONS

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- **Blockchain-Enabled Deep-Tier Supply Chain Finance**
  - INFORMS Annual Meeting 2021, Finance Student Best Paper Award Session, Anaheim, CA Oct 2021
  - INFORMS Conference On Service Science 2021, Online Aug 2021
  - Manufacturing and Service Operations Management Conference 2021, SIG, Online June 2021
  - POMS Annual Conference 2021, Online May 2021
  - INFORMS Annual Meeting 2020, Online Nov 2020
  - INFORMS Annual Meeting 2019, Seattle, WA Oct 2019
  - Manufacturing and Service Operations Management Conference 2019, Singapore June 2019
  - Invited Talk at Peking University, Beijing, China June 2019
- **Managing Operations of a Hog Farm Facing Volatile Markets: Inventory and Selling Strategies**
  - Manufacturing and Service Operations Management Conference 2021, SIG, Online June 2021
  - Supply Chain Finance & Risk Management Virtual Workshop 2021, St. Louis, MO May 2021
- **The Tokenvendor Problem: Tokenizing Cargo Reservations under Overbooking and No-Shows**
  - INFORMS Annual Meeting 2021, Anaheim, CA Oct 2021
  - POMS Annual Conference 2021, Online May 2021
  - INFORMS Annual Meeting 2020, Online Nov 2020
  - INFORMS Annual Meeting 2019, Seattle, WA Oct 2019
  - Invited Talk at Peking University, Beijing, China June 2019
  - Supply Chain Finance & Risk Management Workshop 2019, St. Louis, MO May 2019
- **Buying Frenzy with Resale Market: Operational Strategies under Social Externality**
  - POMS Annual Conference 2021, Online May 2021
- **Financing Inventories with an Investment Efficiency Objective: ROI-Maximizing Newsvendor, Bank Loans**
  - POMS Annual Conference 2019, Washington D.C. May 2019

## PROFESSIONAL SERVICES

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- **Conference Session Chair/Organizer**
  - POMS Annual Conference 2021: FinTech Innovations and Supply Chain Finance
  - INFORMS Annual Meeting 2015, Philadelphia, PA: Health Care Modeling and Optimization
- **Reviewer:** Manufacturing & Service Operations Management, Production & Operations Management, IEEE Transactions on Automatic Control, Omega: The International Journal of Management Science, IEEE Transactions on Automation Science and Engineering, IEEE Robotics and Automation Magazine, International Journal of Production Research, Flexible Services and Manufacturing, Journal of Manufacturing System, Business Process Management Journal

## HONORS AND AWARDS

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- Honorable Mention for the Best Paper, 2020 IISE Transactions Focus Issue on Design and Manufacturing 2021
- Moog Scholar, Olin Business School, Washington University in St. Louis 2019 - 2020
- 2nd Place, Regional Final of Global Student Challenge, Supply Chain Finance Community 2017
- Outstanding Graduates of Beijing 2016
- Outstanding Graduates of Peking University 2016
- “Teijin” Scholarship, Peking University 2015
- Best Conference Paper, 10th IEEE International Conference of Automation Science and Engineering 2014
- China National Scholarship, China Ministry of Education 2014

## INDUSTRY CONSULTING

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- **Anheuser-Busch InBev: Causal Analysis and Improvement for On-Time Loading** Spring 2021
  - Provided insights that can be translated into data-driven operational guidelines to improve On-Time Loading and develop a feasible and cost-efficient work schedule for the workers.
- **Belden (PPC): Forecasting to Improve Service Levels and Inventory Cost** Fall 2020
  - Developed a predictive model integrating a time-series model and machine learning algorithms to accurately forecast the demand and provided more efficient inventory management strategies.
  - Project of the Year, 5th annual Boeing Center Symposium
- **Belden: Price Optimization Model and Salesforce Analysis** Summer 2020
  - Created two pricing models using statistical algorithms to optimize selling prices for all cable products and customers under various order circumstances.
- **Express Scripts: Demand Forecast Modeling** Spring 2020
  - Analyzed historical dispensing and forecast data, identified root causes of forecast errors and developed a demand forecast model to improve forecast accuracy.
- **Anheuser-Busch InBev: Demand Forecasting with Machine Learning** Fall 2019
  - Introduced new features to AB's current machine learning model and tested selected features using time-series and machine learning methods to improve the accuracy of sales forecast.
- **Belden: Finite Capacity Scheduling** Fall 2018
  - Developed a new shop floor finite capacity planning process to improve on-time delivery and manage manufacturing costs from a rough SIOP process.
- **Anheuser-Busch InBev: Dedicated Fleet Optimization** Fall 2017
  - Designed a simulator to evaluate and recommend the optimal fleet size, in response to transportation market dynamics and the effectiveness of current fleet deployment and utilization.
  - Project of the Year, 2nd annual Boeing Center Symposium

## MISCELLANEOUS

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- **Computer:** Python, R, Mathematica, Matlab, SPSS, Minitab, Anylogic, Arena, LaTeX
- **Languages:** Mandarin (Native), English (Fluent)

## REFERENCES

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- **Panos Kouvelis** (Chair of Dissertation Committee)
  - Emerson Distinguished Professor of Supply Chain, Operations, and Technology
  - Director of Boeing Center for Supply Chain Innovation
  - Olin Business School, Washington University in St. Louis
  - Email: kouvelis@wustl.edu
  - Phone: (314) 935-4604
- **Lingxiu Dong** (Member of Dissertation Committee)
  - Professor of Supply Chain, Operations, and Technology
  - Olin Business School, Washington University in St. Louis
  - Email: dong@wustl.edu
  - Phone: (314) 935-6336
- **Danko Turcic**
  - Associate Professor of Operations & Supply Chain Management
  - A. Gary Anderson Graduate School Of Management, University of California at Riverside
  - Email: danko.turcic@ucr.edu
  - Phone: (314) 348-7075