Chamsi Hssaine

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RESEARCH INTERESTS  Design and operations of online marketplaces; data-driven decision-making; revenue management and pricing.

CURRENT POSITION

University of Southern California
Data Sciences and Operations, Marshall School of Business
  • Assistant Professor  August 2023 –

PRIOR POSITIONS

Amazon, Supply Chain and Optimization Technologies
  • Postdoctoral Researcher  July 2022-July 2023
    – Host: Garrett van Ryzin

EDUCATION

Cornell University, Ithaca, NY
  • Ph.D. in Operations Research  May 2022
    – Advisor: Prof. Siddhartha Banerjee
    – Minors: Applied Mathematics, Production and Operations
  • M.S. in Operations Research  March 2020

Princeton University, Princeton, NJ
  • B.S.E. in Operations Research and Financial Engineering  June 2016
    – Honors: Magna Cum Laude
    – Minor: Applied and Computational Mathematics

WORKING PAPERS

The Data-Driven Censored Newsvendor Problem
Chamsi Hssaine, Sean Sinclair. Submitted.

Target-Following Online Resource Allocation Using Proxy Assignments
Chamsi Hssaine, Garrett van Ryzin, Huseyin Topaloglu. Submitted.

End-of-Horizon Load Balancing Problems: Algorithms and Insights
Daniel Freund, Chamsi Hssaine, Jiayu (Kamessi) Zhao. In preparation.

Online Fair Allocation of Perishable Resources
Siddhartha Banerjee, Chamsi Hssaine, Sean Sinclair.
Major Revision in Operations Research.
Runner-Up for the 2024 INFORMS Service Science Diversity, Equity, Inclusion and Justice Paper Competition.

Price Competition Under a Consider-Then-Choose Model with Lexicographic Choice
Siddhartha Banerjee, Chamsi Hssaine, Vijay Kamble.
Reject and Resubmit in Manufacturing & Service Operations Management.

JOURNAL PUBLICATIONS

Plan Your System and Price for Free: Fast Algorithms for Multimodal Transit Operations
Siddhartha Banerjee, Chamsi Hssaine, Qi Luo, Samitha Samaranayake. 
*Transportation Science*, 2024.

**Fair Incentives for Repeated Engagement**
Daniel Freund, Chamsi Hssaine.
*Production and Operations Management*, 2024.

**Real-Time Approximate Routing for Smart Transit Systems**
Siddhartha Banerjee, Chamsi Hssaine, Noémie Périvier, Samitha Samaranayake. 
*ACM Measurement and Analysis of Computing Systems (ACM POMACS)*, 2021. 
(Invited based on acceptance to *ACM SIGMETRICS ’21*, June 2021.)

**Finalist for the 2021 INFORMS Minority Issues Forum Paper Competition.**

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**Refereed Conference Publications**

**Fair Incentives for Repeated Engagement**
Daniel Freund, Chamsi Hssaine. 
Earlier version appeared as extended abstract in *19th Conference on Web and Internet Economics (WINE ’23)*, December 2023.

**Online Fair Allocation of Perishable Resources**
Siddhartha Banerjee, Chamsi Hssaine, Sean Sinclair. 
Earlier version appeared as extended abstract in *ACM SIGMETRICS ’23*, June 2023.

**Real-Time Approximate Routing for Smart Transit Systems**
Siddhartha Banerjee, Chamsi Hssaine, Noémie Périvier, Samitha Samaranayake. 
Earlier version appeared as extended abstract in *ACM SIGMETRICS ’21*, June 2021.

**Information Signal Design for Incentivizing Team Formation**
Siddhartha Banerjee, Chamsi Hssaine. 
Extended abstract in *14th Conference on Web and Internet Economics (WINE ’18)*, December 2018.

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**Honors and Awards**

**Runner-up for the INFORMS Service Science Best Diversity, Equity, Inclusion and Justice Paper Competition**, October 2024
– For “Online Fair Allocation of Perishable Resources,” joint with Sid Banerjee and Sean Sinclair.

**Simons-Berkeley Research Fellowship** (declined), Fall 2022

**Finalist for the INFORMS Minority Issues Forum Paper Competition**, October 2021
– For “Real-Time Approximate Routing for Smart Transit Systems,” joint with Sid Banerjee, Noémie Périvier, and Samitha Samaranayake.

**Selected for the Young Researchers Workshop at Cornell ORIE**, October 2021

**Selected for the Rising Stars program in EECS at UC Berkeley, November 2020**

**Selected for the Stanford GSB Rising Scholars Conference, October 2020**

**Popular Poster Award**, Mechanism Design for Social Good Workshop, June 2019

**Kenneth H. Condit Prize**, Princeton University, June 2016
Departmental award for leadership through academic achievement and community service

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**Invited Talks**

**Target-Following Online Resource Allocation Using Proxy Assignments**
Online Fair Allocation of Perishable Resources
− DSO PhD student Seminar, University of Southern California, Los Angeles, CA, September 2023.

Balls-into-Bins and The Power of Flexibility in Load Balancing Systems
− Amazon, Promise Research Meeting, December 2022.

Pseudo-Competitive Games and Algorithmic Pricing
− Rotman Young Scholar Series, Rotman School of Management OM Department, University of Toronto, September 2022.
− Workshop on Algorithms for Learning and Economics, Naxos, Greece, June 2022.
− Meta, Virtual, April 2022.
− DRO Seminar, Columbia Business School, Columbia University, New York, NY, January 2022.
− DSO Seminar, University of Southern California, Los Angeles, CA, January 2022.
− IOE Seminar, University of Michigan, Virtual, December 2021.
− Bensadoun School of Retail Management Seminar, McGill University, Virtual, December 2021.
− OID Seminar, Wharton School, University of Pennsylvania, Philadelphia, PA, December 2021.
− ISyE Seminar, Georgia Institute of Technology, Atlanta, GA, November 2021.
− ORIE Young Researchers Workshop, Cornell University, October 2021.
− CS Theory Seminar, Cornell University, September 2021.

Satisficing Search and Algorithmic Price Competition
− Imperial College-LBS-UCL OR/MS PhD Seminar, Virtual, March 2021.

Real-Time Approximate Routing for Smart Transit Systems
− Vanderbilt University, TransitScope Lab Group, Virtual, January 2021.

Target-Following Online Resource Allocation
− INFORMS Annual Meeting, Seattle, WA, October 2024.

Price Competition Under Consider-Then-Choose with Lexicographic Choice
− INFORMS RMP Conference, Los Angeles, CA, July 2024.
− INFORMS MSOM Conference, Minneapolis, MN, June 2024.

Online Fair Allocation of Perishable Resources
− INFORMS Annual Meeting, Seattle, WA, October 2024.
− INFORMS MSOM Conference, Minneapolis, MN, June 2024.
− INFORMS Annual Meeting, Phoenix, AZ, October 2023.
− INFORMS MSOM Conference, Montréal, Canada, June 2023.
− SIGMETRICS, Orlando, FL, June 2023.
− ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO’22), Arlington, VA, October 2022.
− Simons Institute Data-Driven Decision Processes Program Workshop, Berkeley, CA, October 2022.

Online Congestion Control for Inbound Capacity Management
− SIAM Conference on Optimization, Seattle, WA, June 2023.
− Amazon Postdoc Summit, Austin, TX, April 2023.
Pseudo-Competitive Games and Algorithmic Pricing
− INFORMS Annual Meeting, Anaheim, CA, October 2021.
− ORIE Young Researchers Workshop, Cornell University, October 2021.

Satisficing Search and Algorithmic Price Competition
− Revenue Management and Pricing Conference, Virtual, June 2021.
− Marketplace Innovation Workshop (Poster), Virtual, May 2021.
− Stanford GSB Rising Scholars Conference, Virtual, October 2020.
− INFORMS Annual Meeting, Virtual, October 2020.
− Kellogg-Wharton OM Workshop, Virtual, July 2020.

Pricing a Mobility Marketplace
− INFORMS Annual Meeting, Seattle, WA, October 2019.
− Young Researchers Workshop (flash talk), Cornell University, October 2019.
− Mechanism Design for the Social Good Workshop, EC'19, June 2019.
− Marketplace Innovation Workshop, Stanford University, June 2019.

Academic Service

Reviewer: Operations Research, Management Science, MSOM, Mathematics of Operations Research, Stochastic Systems, Performance Evaluation, ISE Transactions, ACM-SIAM Symposium on Discrete Algorithms (SODA’23), ACM Conference on Economics and Computation (EC ’19, ’20, ’21), IEEE American Control Conference (ACC ’20)

Program Committees: MSOM 2024 Conference, ACM Conference on Economics and Computation (EC’24, EC’23), ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAMMO ’22, Workshop on Operations of People-Centric Systems at EC’21

Paper Award Committees: George Nicholson Student Paper Competition (2024), RMP Jeff McGill Student Paper Award (2024), Public Sector Operations Research (PSOR) Best Paper Award (2024)

University Service

At University of Southern California:
− Seminar co-organizer for Operations Management group within DSO, 2023-Present
− DSO Women in Data Science Committee, 2023-Present

At Cornell University:
− ORIE PhD Diversity Ambassador, Cornell University, 2021-2022
− Panelist, Academic Street Smarts Workshop for 1st Year PhD students in OR, Cornell University, 2020-2021
− Cornell Tech Liaison, Operations Research Graduate Students’ Association, Cornell University, 2019-2020
− Mentoring Chair, Women in OR, Cornell University, 2018-2020
− Member, Graduate Women in Science, Cornell University, 2016-2022

Teaching
BUAD 311, Introduction to Operations Management: Instructor, Spring 2024-2025
ORIE 4580/5580, Simulation Modeling and Analysis: Teaching Assistant, Fall 2018
ORIE 3800, Information Systems Analysis: Teaching Assistant, Spring 2017-2018
ORIE 3500/5500, Probability and Stochastic Systems: Teaching Assistant, Fall 2016

Prior Industry Experience
Amazon, Sponsored Products, Applied Scientist Intern, June-August 2020
Project title: “Long-Term Impacts of Sponsored Products Interventions on Amazon Shoppers: Estimation and Optimization”

RAND Corporation, Summer Associate, May-August 2018
Project title: “Informing agent-based models with social influence networks: Sampling a large-scale urban network and learning from egocentric network data”

**Deutsche Bank**, Summer Associate, June-August 2015

**CASTLE Labs**, Research Intern, May-August 2014

Project title: “Developing a probability model for power grid faults using incomplete information”