

Thomas Bryant Cassidey

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EDUCATION

- **The University of Alabama**

Operations Management, Ph.D.

Dissertation: “Concurrent Sourcing: Theory and Behavior”

Advisors: Dr. Sharif Melouk and Dr. Nickolas Freeman

Operations Management, M.S.

Philosophy, B.A. with honors, Presidential Scholar

Tuscaloosa, AL

May 2023

RESEARCH INTEREST

- My research focuses on the preparation and response of firms to supply chain disruptions, from theoretical and behavioral perspectives. I develop non-linear and integer optimization formulations and analyses which incorporate stochastic and behavioral information to determine theoretically optimal strategies and predict their performance. I also create production ready algorithms which leverage data to make practical and online decisions. I currently work on inventory and production management and vehicle routing problems.

PUBLICATIONS

- Cassidey, T.B., N. Freeman, and S. Melouk. Leveraging concurrent sourcing for risk mitigation and pricing. *Omega*, 113, 2022.

Formulates and analyzes a non-linear model for concurrent sourcing decisions under all-or-nothing supplier disruptions. Investigates the effect of concurrent sourcing ability on the supplier’s optimal pricing strategy.

MANUSCRIPTS

- Cassidey, T.B. and I. Dayarian. The k traveling repairman problem with stochastic service request times. *Transportation Science*. Submitted Fall 2023.

Presents a novel branch-and-price algorithm to incorporate randomly occurring service request times of customers in a multiple service agent routing problem.

WORKING PAPERS

- Cassidey, T.B., O. Satici, E. Barbee, and B. Keskin. The integrated sourcing and virtual node location problem. *Manufacturing & Service Operations Management*. To be submitted fall 2023.

Develops and solves the inventory availability and customer expectation problem for a retailer subject to carrier network uncertainty.

- Cassidey, T.B., N. Freeman, and S. Melouk. Concurrent sourcing under stochastic lead time risk. *Production and Operations Management*. To be submitted spring 2024.

Analyzes the optimal concurrent sourcing and expediting strategy under supply disruptions manifested as delayed lead times.

RESEARCH PRESENTATIONS

- *Concurrent Sourcing under Stochastic Lead Time Risk*, upcoming, Production and Operations Management Society Annual Conference 2024, Minneapolis, MN
- *The k traveling repairman problem with stochastic service request times*, INFORMS Annual Meeting 2023, Phoenix, AZ

- *The k traveling repairman problem with stochastic service request times*, Transportation Science and Logistics Society Conference 2023, Chicago, IL
- *Concurrent sourcing with random lead times*, Production and Operations Management Society Annual Conference 2023, Tampa, FL
- *Bounded rationality in capacitated and multi-variate newsvendor decisions*, INFORMS Annual Meeting 2022, Indianapolis, IN
- *Concurrent sourcing behavior under supply uncertainty and demand risk*, Production and Operations Management Society Annual Conference 2022, Virtual
- *Leveraging concurrent sourcing for risk mitigation and pricing*, INFORMS Annual Meeting 2021, Anaheim, CA
- *Concurrent sourcing under supply and demand uncertainty*, INFORMS Annual Meeting 2020, Virtual
- *Winning the DOW Big Data Challenge*, UA Business Analytics Symposium 2016, Tuscaloosa, AL

TEACHING PRESENTATIONS

- *Optimization using SQL, Python, and CPLEX*, INFORMS Student Chapter – 2018, Tuscaloosa, AL.
- *Data Analysis with R*, INFORMS Student Chapter – 2017, Tuscaloosa, AL.

TEACHING EXPERIENCE

- **Assistant Professor** California State University, East Bay
MGMT 350: Decision Science, Undergraduate, Hybrid, Synch, Asynch (4.45/5.0) *Fall 2023*
- **Instructor** The University of Alabama
OM 540: Systems Simulation, Graduate, Online (4.27/5.0) *Spring 2022*
OM 300: Intro to Operations Management, Undergraduate, In Person (4.65/5.0) *Summer 2021*
- **Teaching Assistant** The University of Alabama
OM 506: MGMT Science & Spreadsheet Modeling, Executive MBA *Summer 2020*
OM 517: Supply Chain Modeling & Analysis, Graduate *Spring 2020*
OM 500: MGMT Science & Spreadsheet Modeling, Graduate *Summer 2017, 2018*
OM 540: Systems Simulation, Graduate *Fall 2016 - Spring 2017*

RELEVANT COURSEWORK

Mathematics and Statistics

Intro to Real Analysis
 Design of Experiments
 Mathematical Statistics
 Statistical Data Management
 Data Mining

OR Methods

Linear Programming
 Nonlinear Programming
 Integer Programming
 Stochastic Programming
 Systems Simulation

Applications

Inventory Management
 Supply Chain Modeling
 Production Management Models
 Manufacturing Control Systems
 Purchasing & Sourcing

ADDITIONAL RESEARCH/CONSULTING/INDUSTRY EXPERIENCE

- **The University of Alabama** Tuscaloosa, AL
Graduate Research Assistant *2016 - 2018, 2019 - Present*
 Industry Collaboration - SimpleTire
 - Developed algorithms and production software to automate sourcing and goods distribution decisions for a large internet retailer. Developed a supervised learning model and pipeline to predict supplier and transportation performance.

- Formulated and solved a facility location model to mitigate customer expectation deterioration from shipping network disruptions, balancing profit considerations.
- Formulated and solved a model to determine the location of product return centers, considering future expected return sources, transportation costs, and future expected demand.

Culverhouse College of Business

- Developed an integer optimization model and software package to solve the College's course scheduling problem.

- **FI Consulting**

Washington, DC

Consultant, Analyst

2018-2019

Capital One Financial Corporation, Credit Review – Models

- Worked with a team of engineers and statisticians to create a prediction model health tool.

U.S. Department of Education, Federal Student Aid Office (FSA)

- Oversaw the analysis of data from ED internal sources and external credit sources, to generate a loan portfolio valuation.

U.S. Department of the Treasury, Office of Financial Research (OFR)

- Performed end to end validation of models and resulting analyses that are published in OFR's Annual Report. The annual report seeks to identify systematic risk in the U.S. financial system.

U.S. Department of Housing and Urban Development (HUD)

- Acted as owner of the Home Equity Conversion Mortgages program audit. Identified and presented weaknesses and errors in modeling methodology, internal control processes, and model documentation.

- **Independent**

Washington, DC

Consultant

2018 - 2019

- Developed predictions and a loan life simulation model for the U.S. student loan portfolio.
- Developed a genetic algorithm to optimize a portfolio optimization problem. Created software to automate the optimization and forecasting process.

- **Kestra Financial**

Austin, TX

Intern

2016

- Developed software to capture and find patterns in employee production data.

HONORS, AWARDS, SERVICE

Reviewer, INFORMS Journal on Applied Analytics	Since 2023
CSUEB Preview Day College of Business and Economics Representative	2023
CSUEB General Education and Overlay Committee Member	2023-2024
CSUEB College of Business and Economics Symposium, Session Co-Chair and Planning Board Member	2023
Reviewer, Tutorials in Operations Research	2023
Graduate Council Fellow (\$32,904)	2022-2023
Summer Excellence in Research Fellow, highest award (\$10,200)	2022
Outstanding Operations Management Ph.D. Student	2021-2022
Outstanding Operations Management Graduate Teaching Assistant	2020-2021
Reviewer, <i>Omega</i>	Since 2021
Ad-hoc Reviewer, <i>Production & Operations Management</i>	Since 2018
College Admissions Made Possible, ACT exam instructor	2018
National Alumni Association Fellow (\$27,000)	2017-2018
INFORMS Student Chapter Treasurer	2017-2018
Tuscaloosa Emergency Management Association, Operations Consultant	2017
Haitian Economic Research and Development, Operations Consultant	2016-2017
1st Place, Dow Big Data Challenge	2016
SAS Certified Predictive Modeler	2016

TECHNICAL EXPERIENCE

- Programming Languages: C++, Git, Julia, Python, R, SAS, SQL
- Softwares: Arena, CPLEX, Docker, Gurobi, Excel, Linux, PowerPoint, Spark, Tableau, Windows
- Cloud: AWS, Digital Ocean, Linode, Slurm, Snowflake

REFERENCES

- Dr. Sharif Melouk
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- Dr. Burcu B. Keskin
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Additional references available upon request.