

Sanchita Das

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Education

- 2021–2025[†] PhD, *Operations*, University of Washington, Advisors: Prof M Shunko, Prof L Boussioux
2020–21 MEng, *Supply Chains*, Massachusetts Institute of Technology, Advisor: Dr C Argueta
2010–15 BArch, *Architecture with Minor in Economics*, Indian Institute of Technology Kharagpur

Research Interests

Optimization (Linear, Integer, Stochastic and Robust Formulations), Causal Inference

Work Experiences

- 2018–20 Operations Area, Indian School of Business, Hyderabad, India
Research Associate, Mentors: Prof S Deo & Prof S Devalkar.
2015–18 Flipkart (e-commerce arm of Walmart Group), Bangalore, India
Supply Chain Design, Specialist Track

Recognitions

- 2024 **Teaching:** Annual Graduate Student Teaching Award, ISOM, Foster School of Business.
2021 **Research:** Masters Thesis at MIT recognized by Council of Supply Chain Practitioners, Boston among top 3 projects in the graduating class.
2018 **Practise:** Recognized as Outstanding Contributor to Transport Design at Flipkart.
2008 **Scholarships:** National Talent Search Scholar recognition from Government of India.

Conference Presentations

- DSI 23 Capacity Planning of Labor for Weather Sensitive Apple Harvest
S Das, M Shunko and L Boussioux
INFORMS 23 Enabling Data Driven Shifts in Agriculture
S Das, M Shunko and L Boussioux
INFORMS 23 Comparing Hotspots of Low and Variable Crop Yield Using TabText vs Computer Vision
L Boussioux, S Das* and S Manjunath*
POMS 22 Delivering Locally Sourced Nutritious Food Baskets in India
S Das, C Mejia, T Collese and R Narad

Workshops and Manuscripts

- NeurIPSW 21 Apertures in Agriculture Seeking Attention
S Das* and R Srinivasan* **Oral Presentation** [pdf]
SC Biennial 18 Approaches to Catering to Variability in a First Mile Logistics Network in India
S Das, A Gahlawat and S Kanchan **Oral Presentation** [pdf]
In Review 20 Economic Impact of Introducing Coarse Cereals to Public Distribution System in India
S Devalkar, S Deo, B Jha, A Chhatre, S Das and S Jhunjhunwala
IIM-A Cases 13 Case Note - A Case of Public Private Partnership in Agri Warehousing, Rajasthan, India
R Jain, G Raghuram and S Das – Case [pdf] – Case Note [pdf]

Projects (Research and Product Deployments)

- Oct 23–Present **Capacity Planning for Weather Sensitive Apple Harvest Labor**
● Proposing dynamic allocation of harvest labor to weather sensitive apple maturity dates.
● Utilizing a combination of simulation methods and adaptive robust optimization.

*Equal Contributions

- May 23–Sep 23 **Identifying Hotspots of Low and Variable Crop Yield**
- Utilized ag-production census of India (APY) to identify yield hotspots for cereals and pulses.
 - Compared linear regression, computer vision, tab text (NLP + LLM) for prediction accuracy.
- May 22–Dec 22 **Mitigating Malnutrition and Enabling Sustainable Cultivation in India**
- Performed game-theoretic modeling of equilibrium prices and quantities for enabling government driven shift to cultivation of healthier, agro-ecologically sustainable crops in India.
 - Designed a contract for risk-sharing due to new crop yield between government and farmers.
- Jan 21–Mar 22 **Delivering Locally Sourced Nutritious Food Baskets in India**
- Utilized taste preferences from consumption census to design customized nutritional food baskets and a strategy to distribute them at population scale for vulnerable Indian households .
 - Combined techniques of PCA, clustering, bin packing algorithm and a large Mixed Integer LP.
- Sep 18–Dec 19 **Economic Impact of Introducing Coarse Grains to India’s Public Distribution**
- Partook in modeling a benchmark Public Distribution System network for foodgrains in India.
 - Compared as-is situation of large scale centralized procurement and distribution of rice and wheat against proposed decentralized procurement and distribution of millets.
 - Compared costs of optimal operations and proposed large transportation savings.
- Jan 17–Jun 18 **Product - Transport Management System for Line Haul Trip Execution**
- Owned design charter for productizing trip workflows of Last Mile - Line haul leg of network.
 - Scaled adoption to approximately 1000 touchpoints pan India in a cross functional team.
- Jan 16–Dec 16 **Approaches to Catering to Variability in e-commerce First Mile Logistics**
- Proposed a set of alternate pickup models as flexible capacity to cater demand uncertainty.
 - Piloted and deployed an outsourcing model for a selected set of sellers (scale of 400 hubs).
- May 17–Oct 17 **Flight Scheduler Design Based on 3rd Party Air Cargo Rate Cards**
- Proposed a scheduler for e-commerce service levels of next day delivery, same day delivery.
 - This served as a key module for network design, air cargo billing and vendor management.

PhD Course Projects

- Mar 23–Apr 23 **Causal Modelling**
- Estimated causal effect of resource allocation on mental fatigue in an employee wellness dataset (observational). Established identifiability of bounds for the Average Causal Effect.
- Feb 23–Mar 23 **Theory of Causation**
- Structural Equation Modelling to predict and optimize crop yields using observational data.
 - Formulated a causal query, checked its identifiability, estimated the interventional distribution.

Skills

- Languages Python, L^AT_EX
- Others CPLEX ILOG Studio, QGIS Maps, Visio, R, Tableau, Stata, Azure Cloud
- Courses **Optimization** -Math Programming (Survey Course), Stochastic Programming, Queuing Theory and Simulation, Inventory Theory, Linear Programming, Integer Programming
- Information Systems** - Empirical Methods in IS, Stochastic Differential Equations
- Marketing** - Seminar on Empirical Models in Marketing, Discrete Choice Models
- Statistics** - Causal Modelling, The Structural and Counterfactual Theory of Causation
- Econometrics** - Econometric Analysis (Cross Sectional, Time Series Intro, Panel Data)

Service

- Reviewer AAI, DSI
- Teaching Instructor, Supply Chain Management, Professional Certificate Program, Spring '24
- Teaching Assistant, Operations Research Data Analytics, Masters in Analytics
- Teaching Assistant, Operations Management, Core MBA
- Teaching Assistant, Decision Modelling Using Spreadsheets, Hybrid MBA

†Expected in Fall 2025