Sanchita Das

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Education

2021–2025† PhD, *Operations*, University of Wahington, 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 Experience

Sep 18–Aug 20 Operations Area, Indian School of Business, Hyderabad, India
Research Associate, Mentors: Prof S Deo & Prof S Devalkar.

Sep 18–Mar 20 Ag-Supply Chain Startup, Bangalore, India
Research Consultant

2015–18 Flipkart (e-commerce arm of Walmart Group), Bangalore, India
Supply Chain Design, Specialist Track

Scholastic/Practice Based Achievements

2021 **Masters Thesis** award (top 3) at MIT by Council of Supply Chain Practitioners, Boston.

2018 **Outstanding Contributor** to Transport Design recognition at Flipkart (Walmart Group).

2008 **National Talent Search Scholarship** by Government of India for undergraduate studies.

2008 **Olympiads** Multiple top 200 National ranks in Science, Cyber and Informatics Olympiads.

2022 **Teaching:** Rated among top 20 percentile Teaching Assistants at UW for Fall 2022. Operations Research Data Analytics course for Masters Program in Business Analytics.

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*

INFORMS 22 Mitigating Malnutrition and Enabling Sustainable Cultivation in India
S Das and M Shunko

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.

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, LaTeX

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)

Computer Science - Matrix Algebra, Deep Learning, Computing for Social Good

Hobbies Playing Keyboard, Basketball, Swimming, Badminton, Writing

*Equal Contributions
†Expected in Fall 2025