

Satender Gunwal

Ph.D. Student, Information and Decision Sciences
University of Illinois Chicago

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BACKGROUND

Education

- **Ph.D. in Decision Sciences**, University of Illinois Chicago 2023–Present
 - **B.S.–M.S. in Mathematical Sciences**, Indian Institute of Science Education and Research (IISER) Mohali 2016–2021

Experience

- **Graduate Research Assistant**, University of Illinois Chicago, Chicago, IL, USA 2023–Present
 - **Research Aide**, Argonne National Laboratory, Lemont, IL, USA 2024
 - **Pre-doctoral Research Associate**, Indian Institute of Management Ahmedabad, Ahmedabad, India 2021–2023

RESEARCH PAPERS

Working Papers

- Learning-Augmented Power System Expansion Planning for Spatial Reliability. Satender Gunwal, Selvaprabu Nadarajah, Todd Levin.
In preparation for submission to *Operations Research*.

Published

- A Linear Programming-Based Hyper Local Search for Tuning Hyperparameters ([Link](#)).
Ankur Sinha, Satender Gunwal.
Operations Research Letters, 61 (2025), Article 107287.
LP formulations for bilevel hyperparameter tuning in machine learning models.

Work In-Progress

- Value-Based Best-in-Class Water Management Decisions for Hyperscale Data Centers.
Arman Aminipanah, Lisa Bonnett, **Satender Gunwal**, Selvaprabu Nadarajah.

- **CLEAN in the Americas: Start Local, Unlock Financing, and Leverage Technology to Bridge Local Action and Global Goals.**
Satender Gunwal, Selvaprabu Nadarajah, Collaborators.
 - **Decision Transformers for Sparse-Reward Games.**
Mahtab Danaee, **Satender Gunwal**, Selvaprabu Nadarajah.
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TEACHING EXPERIENCE

- Teaching Assistant (Co-developer), IDS 509: Foundations of Analytics and AI for Supply Chain and Operations Management, University of Illinois Chicago (Fall 2024, Spring 2025).
 - Teaching Assistant (Co-developer), IDS 494: Data-Driven Decisions for Sustainable Business, University of Illinois Chicago (Fall 2024, Spring 2025).
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INVITED TALKS

Learning-Augmented Power System Expansion Planning for Spatial Reliability

- Commodity and Energy Markets Association (CEMA) Annual Meeting, Houston, TX (2025).
- INFORMS Annual Meeting, ENRE Electricity, Atlanta, GA (2025).

CLEAN in the Americas

- Sustainability Research and Innovation (SRI) Congress (Workshop Session), Chicago, IL (2025).
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SERVICE

Reviewer

- Electronic commerce research (ECR), 2023.

Conference Organisation

- Session Chair, Grid Modernization Investment and Operational Security, ENRE Electricity, INFORMS Annual Meeting, 2025.
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COMPUTATIONAL SKILLS

Languages: Python, R, MATLAB, C/C++, Java, SQL

Optimization: Gurobi, CVXPY, Pyomo

ML / Data: PyTorch, NumPy, Pandas, Scikit-learn

Systems: Linux, Git, HPC environments