

# ABHINANDAN DALAL

## CONTACT INFORMATION

---

The Wharton School, University of Pennsylvania, Dept. of Statistics and Data Science;

**Office Address:** Academic Research Building, 265 South 37th Street, Philadelphia, PA 19104

✉ abdalal@wharton.upenn.edu

☎ +1 267-934-6680

🌐 [abhinandan-dalal-3a98b2151](#)

## ACADEMIC AFFILIATION

---

- **PhD in Statistics & Data Science**, The Wharton School, University of Pennsylvania  
Advisor: Dylan Small Fall 2021 - Spring 2026 (Expected)
- **Master of Statistics**, Indian Statistical Institute Fall 2019 - Spring 2021
- **Bachelor of Statistics**, Indian Statistical Institute Fall 2016 - Spring 2019

## PUBLICATIONS AND PREPRINTS

---

### Published

1. Abhinav Chakraborty\*, Anirban Chatterjee\* and **Abhinandan Dalal\*** (2024). PrIsing: Privacy-Preserving Peer Effect Estimation via Ising Model. *Proceedings of The 27th International Conference on Artificial Intelligence and Statistics (AISTATS)*, PMLR 238:2692-2700.

### Manuscripts under review/revision

2. **Abhinandan Dalal** and Eric J. Tchetgen Tchetgen (2025). Partial Identification of Causal Effects for Endogenous Continuous Treatments. *arXiv:2508.13946*. Submitted to *Journal of the Royal Statistical Society: Series B*.
3. **Abhinandan Dalal**, Patrick Blöbaum, Shiva Kasiviswanathan and Aaditya Ramdas (2024). Anytime-Valid Inference for Double/Debiased Machine Learning of Causal Parameters. *arXiv:2408.09598*. Submitted to *Journal of Machine Learning Research*.
4. William Bekerman\*, **Abhinandan Dalal\***, Carlo del Ninno, Dylan S. Small (2024). Planning for Gold: Sample Splitting for Valid Powerful Design of Observational Studies. *arXiv:2406.00866*. Major Revision at *Biometrika*.

### In preparation

5. **Abhinandan Dalal\*** and Anirban Chatterjee\*. Double Robust Kernel Tests for Equality and Effect - Heterogeneity of Conditional Counterfactual Distributions.
6. **Abhinandan Dalal**, Diganta Mukherjee and Subhrajyoty Roy. Detecting Reserve Price Signaling via Controlled Direct Effects: Evidence from Tea Auctions in India. (Earlier version: *arXiv:2005.02814*.)
7. **Abhinandan Dalal**, Sayak Chatterjee and Anirban Chatterjee. Doubly Double Robust Treatment Effect Estimation under Unknown Network Interference in Observational Studies.

---

\* denotes equal contribution

8. **Abhinandan Dalal**, Jeffrey Zhang and Dylan S. Small. Partial identification in Sensitivity Analysis with Negative Control Outcomes.
9. **Abhinandan Dalal**. Three distinct kinds of robustness in network interference.
10. Manit Paul and **Abhinandan Dalal**. Estimation of causal effects using interaction effects and negative control outcomes.
11. **Abhinandan Dalal** and Sagnik Nandy. Preference Alignment of Large Language Models using Proximal Causal Inference.

## Technical Reports

1. **Abhinandan Dalal**, Diganta Mukherjee and Soumendu Sundar Mukherjee (2021). An endogenous (game-theoretic) approach to explore epidemic dynamics on a network (Masters Dissertation). [Link to report](#)
2. Navonil Deb\*, **Abhinandan Dalal**\* and Gopal K Basak (2020). Finding Optimal Cancer Treatment using Markov Decision Process to Improve Overall Health and Quality of Life. *arXiv:2011.13960*
3. Arindam Roy Chowdhury\*, **Abhinandan Dalal**\* and Shubhajit Sen\* (2020). Accelerography: Feasibility of Gesture Typing using Accelerometer. *arXiv:2003.14310*
4. Diganta Mukherjee, **Abhinandan Dalal** and Subhrajyoty Roy (2019). Feasibility of Transparent Price Discovery in Tea through Auction in India. *Commodity Insights Yearbook 2019, Multi Commodity Exchange of India Ltd.* [Link to article](#)

## AWARDS AND ACCOLADES

---

<b>June 2025</b>	<b>Best Student Paper in Application of Statistics and Data Science</b> , International Indian Statistical Association
<b>May 2025</b>	<b>George James Term Fund for American Causal Inference Conference</b> , University of Pennsylvania
<b>Dec 2024</b>	<b>Nominated for Best Student Paper in Application of Statistics and Data Science</b> , International Indian Statistical Association
<b>May 2024</b>	<b>George James Term Fund for International Conference on Artificial Intelligence and Statistics (AISTATS)</b> , University of Pennsylvania
<b>June 2022</b>	<b>George James Term Fund for The 2022 IMS Annual Meeting</b> , University of Pennsylvania
<b>May 2021</b>	<b>Nominated for Prasanta Chandra Mahalanobis Gold Medal</b> , Indian Statistical Institute
<b>Dec 2019</b>	<b>Nominated for best paper at International Conference of Operations Research and Decision Sciences (ICORDS)</b> , Indian Institute of Management, Vishakhapatnam
<b>Mar 2019</b>	<b>All India Rank 1</b> in Mathematical Statistics (MS) in the Joint Admission Test for M.Sc. 2019 (JAM) conducted by the Indian Institute of Technology(s)
<b>Dec 2018</b>	<b>top 25 percentile in the world "Individuals category"</b> and <b>best individual entry</b> from ISI Kolkata at <b>Simon Marais Mathematics Competition</b> undergraduate <b>Asia-Pacific Mathematics</b> competition inspired by William Lowell Putnam Mathematical Competition
<b>2016 - 21</b>	<b>Dean's List for Toppers</b> , Indian Statistical Institute

**June 2016** Secured WBJEE (West Bengal Joint Entrance Examination) rank **53** in engineering entrance

## INTERNSHIP EXPERIENCE

---

- May 2024** **Applied Scientist Intern**, SCOT Regional Forecasting, **Amazon**  
*Feasibility and utility analysis of Earth Mover distance optimization for regional demand forecasting using proximal causal analysis. Analysis predicts an estimated annual savings of 78million USD.* Supervisors: Rahul Gopalsamy & Kenny Shirley
- May 2023** **Applied Scientist Intern**, **Amazon Web Services**  
*Developed anytime valid inference for causal effect estimation under double/debiased machine learning framework* Supervisors: Patrick Blöbaum & Shiva Kasiviswanathan
- May 2020** **Summer@Duke Statistical Science internship** (virtual due to Covid 19)  
*On Designing powerful randomization for exact p-values of causal effects under network interference* Supervisor: Alexander Volfovsky
- May 2020** **Research Intern at Bio-inspired Communication (BCS) Lab, Technische Universität (TU) Darmstadt**, Germany (virtual due to Covid 19)  
*On Moments of Causal Estimator of binary Markovian input given output in a Poisson channel* Supervisor: Heinz Köppl
- May 2019** **Summer Intern at DST- Center for Policy Research at Indian Institute of Science**  
*Analysing usefulness of public R & D grants in India- BIRAC and SBIRI: Exploring Causal Aspects using Regression Discontinuity Design* Supervisor: Venkat Nadella

## TEACHING AND MENTORING

---

### Teaching Assistantships at Penn

- Fall 2025** STAT 9210: **Observational Studies** (for Graduate Students)
- Spring 2025** STAT 5330: **Stochastic processes** (for Undergraduate Students)
- Spring 2025** STAT 1110: **Introductory Statistics** (for Undergraduate Students)
- Fall 2024** STAT 4320: **Mathematical Statistics** (for Undergraduate Students)
- Fall 2023** STAT 4300 & STAT 5100: **Probability** (for Undergraduate/Graduate Students)
- Spring 2023** STAT 9700: **Mathematical Statistics** (for Graduate Students)
- Spring 2022** STAT 521: **Applied Econometrics II** (for Graduate Students)

### Mentoring Experience

- Spring 2025** **Wharton Directed Reading Program (WDRP)** mentor for *Sheyan Lalmo-hammed*
- Fall 2024** **PhD Peers program** mentor for incoming PhD student *Soham Mallick* to navigate the program and transition to Penn

- Spring 2024**    **Undergraduate Research in Probability and Statistics (URPS)** mentor for *Roberto Ligeralde*, with Da Wu
- Spring 2022**    **Undergraduate Research in Probability and Statistics (URPS)** mentor for *Ryan Jeong* and *Alexandru Lopotenco*, with Prof. Robin Pemantle

## CONFERENCES & WORKSHOPS

---

- Observational Causal Inference with Unknown/Mismeasured Network Interference
  - PhD Student Seminar, Dept. of Statistics & Data Science, University of Pennsylvania, Philadelphia, PA (2025).
- Planning for Gold: Sample Splitting for Valid Powerful Design of Observational Studies.
  - Annual Conference of International Indian Statistical Association, Lincoln, NE (2025).
  - PhD Student Seminar, Dept. of Statistics & Data Science, University of Pennsylvania, Philadelphia, PA (2024).
- Role of Earth-Movers Distance as a metric for Regional Forecasting
  - Intern Presentations, Amazon Supply Chain Optimization Technologies, New York City, NY (2024).
- Anytime Valid Inference for Double/Debiased Machine Learning of Causal Parameters
  - American Causal Inference Conference, Detroit, MI (2025).
  - Annual Conference of International Indian Statistical Association, Kochi, India (2024).
  - Penn Center for Causal Inference Seminar, Philadelphia, PA (2024).
  - Young Researcher Presentations, Amazon Supply Chain Optimization Technologies, New York City, NY (2024).
  - Intern Presentations, Amazon Web Services, Santa Clara, CA (2023).
- Modeling county level firearms related fatal assaults in the United States
  - Joint Statistical Meeting, Toronto, Canada (2023).
- An endogenous approach to explore epidemic dynamics on a network
  - IMS Annual Meeting, London, UK (2022).
- Modern Statistical Challenges under a Causal Lens
  - P.C.M. Gold Medal Presentation, Indian Statistical Institute, Kolkata, India (2021).
- Feasibility of Automation in Price Setting for Tea Auction
  - International Conference of Operations Research and Decision Sciences (ICORDS), Indian Institute of Management Vishakhapatnam, India (2019).
  - XXIXth Annual General Conference on Contemporary Issues in Development Economics, Jadavpur University, Kolkata, India (2019).
  - Third International Conference on Issues in Economic Theory and Policy, Presidency University, Kolkata, India (2019).

## PROFESSIONAL SERVICE

---

- **Reviewer** for Journal of the Royal Statistical Society: Series B, Biometrics, Journal of the American Statistical Association
- **Co-organizer** for Statistics Dept. Student Seminar 2021-22 at Penn

## SKILLS

---

### Computer Skills

- R, MS Office
- $\text{\LaTeX}$
- C, SPSS, SQL, Git (basic)

### Language Skills

- Bengali (native)
- English, Hindi (fluent)
- Spanish (rudimentary)