Abhineet Agarwal

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Education

- **University of California, Berkeley** *2020 - Present*
  PhD, Statistics
  - Advisor: Prof. Bin Yu
  - References: Prof. Bin Yu, Prof. Giles Hooker, Prof. Anish Agarwal
  - Research Interests: Artificial Intelligence, Interpretability, Deep Learning, Large Language Models, Tree-Based Models, Causal Inference, Bandits & Reinforcement Learning

- **Columbia University** *2015-2019*
  B.A. Physics, Mathematics
  - Awards: Magna Cum Laude, Phi Beta Kappa, Science Research Fellow, Departmental Honors

Work Experience

- **Citadel** *May 2024 - August 2024*
  Quantitative Research Intern, Equity Quantitative Research (EQR) New York
  - Developed statistical and ML models for alpha-capture

- **Flatiron Institute, Center for Computational Physics** *May 2018 - May 2019*
  Research Intern, Millis Lab New York
  - Applied and developed numerical methods to study novel superconductors

Skills

- **Programming/ML Tools:** Python, Git, Pytorch, Scikit-Learn, Hugging Face
- **Research Skills:** Artificial Intelligence, Machine Learning, Interpretability, Deep Learning, Tree-Based Models, Causal Inference, Experiment Design, Recommender Systems (Rankings), ML for Tabular Data

Publications

C=Conference, J=Journal, S=In Submission

[S.1] Abhineet Agarwal, Bin Yu. (2024). **Tree-Transformers: Combining Tree-Based Models with Mixture of Experts & Transformers for Improved Accuracy and Inference Cost.** Submitted to **NeurIPS (2024)** 3^{rd} Workshop on Table Representation Learning

[C.1] Abhineet Agarwal, et al. (2024). **Multi-Armed Bandits with Network Interference**. Accepted, **NeurIPS (2024)**

[C.2] Liwen Sun, Abhineet Agarwal, et al. (2024). **ED-Copilot: Reducing Emergency Department Wait Time with Language Model Diagnostic Assistance**. In **ICML (2024)**

[J.1] Abhineet Agarwal, et al. (2024). **Fast Interpretable Greedy Tree Sums (FIGS)**. Accepted to **Proceedings of the National Academy of Sciences (PNAS)**.

[C.3] Abhineet Agarwal, et al. (2023). **Synthetic Combinations: A Causal Inference Framework for Combinatorial Interventions**. In **NeurIPS 2023**, extended version in submission to **Econometrica**

[S.2] Abhineet Agarwal, et al. (2023). **MDI+: A Random-Forest Based Flexible Feature Importance Framework**. Manuscript submitted for publication in **Journal of the American Statistical Association (JASA)**.

[C.4] Abhineet Agarwal, et al. (2022). **Hierarchical Shrinkage: Improving the Accuracy and Interpretability of Tree-Based Methods**. In **ICML (2022),** ***Oral Presentation***

[C.5] Tan Yan Shuo, Abhineet Agarwal, et al. (2022). **A Cautionary Tale on Fitting Decision Trees to Additive Models: Generalization Lower Bounds**. In **AISTATS (2022)**

[J.2] Abhineet Agarwal, et al. (2022). **Veridical Flow: A Python Package for Building Trustworthy Data-Science Pieplines with PCS**. Published in **Journal of Open-Source Software (JOSS)**.

Service

- **Reviewer**
  - Conferences: *NeurIPS, ICML, AISTATS (Top Reviewer)*
  - Journals: *Annals of Applied Statistics, Annals of Statistics, IEEE Transactions on Information Theory*
- **Teaching**
  University of California, Berkeley
  - Graduate Student Instructor for Physics 8A/B