Aditya Mittal

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EDUCATION

M.S. in Computer Science - University of California, Irvine   Irvine, CA
Expected graduation in 2027   *Sept. 2025 – June 2027*

B.S. in Statistics (Highest Honors) - University of California, Davis   Davis, CA
Minors in Mathematics and Computer Science | Dean's Honor List | GPA: 3.90/4.00   *Sept. 2021 – June 2025*

WORK EXPERIENCE

Undergraduate Research Assistant - UC Davis   Davis, CA
Department of Statistics and Computer Science   *June 2023 – June 2025*

- Designed and implemented **TowerDebias**, a new post-processing algorithm to reduce bias in black-box ML classifiers; evaluated fairness–accuracy trade-offs across multiple tabular datasets.
- Developed a parallelized **R** pipeline to run cross-validated sweeps, compute fairness metrics (statistical parity difference, equalized odds, correlation), and cut experiment runtime by over 50%.
- Authored a journal submission and maintained reproducible code, figures, and experiment logs for replicability.

Department of Computer Science   *June 2024 – Sept. 2024*

- Built an end-to-end pipeline combining **LLM**-based relation extraction with **GNN** link prediction to generate knowledge graphs from hardware-security datasets (weaknesses, vulnerabilities, attack patterns).

Undergraduate Statistics Grader - UC Davis   Davis, CA
Department of Statistics   *Jan 2023 – June 2023*

- Graded coursework and exams for Applied Statistics, Analysis of Variance, Applied Time Series Analysis.

Business Analyst Intern - Cisco   San Jose, CA
Summer Intern; Data, Insights, and Analytics Team   *June 2023 – Sept. 2023*

- Designed interactive **Power BI** dashboards for Quarterly Business Reviews to track supply-chain KPIs.
- Automated data extraction and transformation with **Python** and Microsoft tools, cutting reporting time by 40%.

Summer Intern; Global Trade Compliance Team   *June 2022 – Sept. 2022*

- Built a centralized support system in **Smartsheet**, reducing licensing costs by $25,000 annually.
- Led global UAT with cross-functional teams; created SOPs and training materials for rollout.

PROJECTS

Data Science Looks at Discrimination (R Package) | *R, Python, Quarto, Github*   *June 2023 – Dec 2023*

- Developed an **R** package for discrimination analysis with automated EDA templates, bias diagnostics, and fair predictive modeling workflows. Package available on CRAN.
- Implemented fairness metrics (statistical parity difference, equalized odds) and post-processing methods with cross-validation for linear and logistic models.
- Authored Quarto documentation and built Python interfaces via **rpy2**. Python version available on PyPI.

PUBLICATIONS & PREPRINTS

1. Aditya Mittal and Norman Matloff. *TowerDebias: A Novel Unfairness Removal Method Based on the Tower Property.* 2024. arXiv:2411.08297.
2. Aditya Mittal, Norman Matloff, Taha Abdullah, Arjun Ashok, Brandon Estrada. *dsld: A Socially Relevant Tool for Teaching Statistics.* 2024. arXiv:2411.04228.

SKILLS

Languages: Python, R, SQL, C/C++, MATLAB, HTML/CSS
ML Libraries: PyTorch, TensorFlow, NumPy, Pandas, Scikit-learn, R libraries (tidyverse, caret, ggplot2)
Relevant Coursework: Data Structures & Algorithms, Probability Theory, Applied Linear Algebra, Multivariate Data Analysis, Real Analysis, High-Performance Statistical Computing, Statistical Learning, Machine Learning
Awards: CRA Outstanding Undergraduate Researcher (Honorable Mention), UC Davis Statistics Outstanding Performance Citation