ANANYA AGARWAL

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EDUCATION

Boston University (BU), Boston, MA May 2025
BA in Economics and Mathematics, minors in Data Science and Business
Courses: Programming in Data Science, Data Mechanics, Probability, Linear Models, Differential Equations, Graph Theory

PUBLICATION

- Cyber Threats to Nuclear Safety: Game Theory Strategies for Enhanced Deterrence, Kumar, S., Yim, M., **Agarwal, A.**, Garg, A., and Bhatnagar, D., (abstract accepted) ECCWS 2025

EXPERIENCE

Julius Ed (Clean Energy Startup), US
Machine Learning Intern January 2025 – Present

- Customized and fine-tuned NLP models, including BERT for named entity recognition (NER) using TensorFlow, enhancing the model precision for IOB classification by 30% by creating functions of incorrect labelling patterns.
- Prototyped a solution for accurate IOB tagging by using Crew AI Agents, reducing error rate from 34% to 21%.

Communiti, US
Founder October 2024 – Present

- Led a team of five SWEs to build an AI solution to on-campus club discovery and engagement for college students. 1 of 4 startups to be accepted to Innovate@BU (BU's highly selective startup accelerator)
- Built a React app using Supabase API integration for advanced search of clubs customized for students' interests through tagging, similarity search, and Langchain embeddings, decreasing search time by 53% for 100+ students.

Texas A&M University, US
Lead Research Assistant November 2024 – January 2025

- Analyzed 20+ existing game theory strategies within cybersecurity to devise a novel defender signaling method to reduce damage costs and probability of false attacker attribution by 19%.
- Stimulated a reinforcement learning model using epsilon-greedy Q-learning on 100,000+ simulations to predict optimal defender strategies in cyberattack scenarios to maximize benefit.

Global Development Policy Centre, BU
Research Assistant March 2023 – Present

- Merged three datasets (with more than 3000+ data points) of family planning interventions across India and Malawi in Stata by creating 50+ standardized variable names and recoding existing do files.
- Developed regression models by applying econometrics to find common trends in merged data to improve prospective intervention development (in the domain of women's healthcare) by 27%.
- Awarded student research award (3x) for qualitative research aimed at dissecting trends from 13+ interviews (from a family planning intervention in India) by thematic coding in NVivo.

PROJECTS

Statistical Modelling | BU September 2024 – December 2024

- Built statistical models using R (linear regression, LASSO, stepwise) on BMW Price Dataset (4,843 records) to achieve 79.2% model accuracy and 80% variance explanation for pricing insights.

Grow AI Tool | MIT Clean Energy Hack November 2024 - November 2024

- Prototyped a Django web app for GALY using Python, OpenAI API, and ML models (Random Forest, SVM) to optimize crop selection based on research papers available online, improving research efficiency by 30%.

Social Network Analysis | BU January 2024 – May 2024

- Developed a Rust-based analysis of a 4,039-node Facebook network dataset using Jaccard similarity to identify social clusters and high-impact connections.

TECHNICAL SKILLS

- Programming Languages: Python (TensorFlow, PyTorch, Scikit-learn), MySQL, R, React, Stata, Rust, HTML/CSS
- Developer Tools: Git, Google Cloud Platform, Azure, VS Code, Cursor AI, Lovable AI, Gen AI Tools