Raymond Tana

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SUMMARY

Graduating PhD Candidate at Penn State University in Mathematics, specializing in Logic and Computer Science. Qualifications in Data Science, Machine Learning, and Education Technology. Able to solve difficult problems, effectively communicate complex concepts to non-technical stakeholders, and produce impressive deliverables.

WORK EXPERIENCE

Erdős Institute (Data Science): *Remote* **Jan. – Apr. 2025**

Data Science Teaching Assistant

- Lead weekly problem-solving sessions for cohorts of 3-5 PhD students, with hands-on guidance in Python, modeling, and ML.
- Improve overall cohort performance through collaborative learning and best practices, as evidenced by positive student feedback.

ASML (Software Development): San Diego, CA **May – Aug. 2024**

Reliability Engineering Intern [PREVIEW] [BLOG POST]

- Projected $100,000's saved: my tool helps schedule downtime for component replacements in clients' lithography machines.
- Authored dashboard software to perform a new, dynamic reliability growth analysis of failure data in tin droplet generators.

Penn State Calculus-with-Jupyter (EdTech): State College, PA **Jan. 2021 – Aug. 2023**

Software Developer [TEXTBOOK LINK]

- To date, have saved $100/student × 1000 students in our free, accessible, and open-source pilot calculus course at Penn State.
- Created content, wrote backend logic, and designed a universal scripting language for coding math problems.

SELECTED PROJECTS

AP Outcomes vs. University Influence – Erdős Institute Data Science Bootcamp [APP] [REPO] **Fall 2024**

- Quantified the benefit of living near major universities to standardized test scores.
- Compared naive linear models after performing PCA with ensembled models such as XGBoost, AdaBoost, and Random Forest.
- Designed a Streamlit app to presents the findings as an organized and interactive story.

Compression and GenAI – *BlueDot Impact AI Alignment Bootcamp* [LINK] **Spring 2024**

- Demonstrated the theoretical safety implications of impressive compression capabilities of existing large language models.
- Proxied GPT-2's learning capabilities through my measure of latent representation sizes across layers of a neural network.

Impact of Weather and Agricultural Events on Truckload Cost – *CH Robinson* [LINK] [SLIDES] **Summer 2021**

- Reliably forecasted trucking costs to potentially save $100,000's on the company's contracts for shipping harvested vegetables.
- Produced a reliable (MAPE < 13%) predictive SARIMA model provided a few regressors (precipitation, temperature, historical diesel price, and pandemic data) along with the produce's market-scenario classification (either: steady, in-shock, or in-transition).

LEADERSHIP EXPERIENCE

Penn State Student Sustainability Advisory Council **Aug. 2020 – May 2023**

Carbon Neutrality Working Group Leader

- Successfully advocated for the establishment of a Sustainable Labs Program at Penn State, now covering over 50 labs.
- Advised University administration on carbon drawdown and divestment, inspiring the Carbon Emissions Reduction Task Force.

SKILLS & CERTIFICATIONS

- Languages & Platforms: Python, JavaScript, R, HTML, Jupyter, VS Code, GitHub, LaTeX, SQL, C++, Vue.js, Lean.
- Python Libraries: Pandas, Matplotlib, SciPy, Scikit-learn, Plotly, Statsmodels, Streamlit, Dash, Flask, XGBoost.
- Machine Learning: PyTorch, Hugging Face, Deep Learning, Model Evaluation.
- Quantitative: Maximum Likelihood Estimation, Big Data, Machine Learning, Reliability Engineering.
- Certifications: The Erdős Institute Data Science & Software Engineering for Data Scientists Boot Camps, BlueDot Impact Artificial Intelligence Alignment Bootcamp, IMA Math-to-Industry Boot Camp VI.

EDUCATION

Pennsylvania State University, *Mathematics*	PhD	**Expected Aug 2025**
Pennsylvania State University, *Mathematics (Honors) & Physics*	Bachelor of Science	**May 2019**