TREY WOOD, PH.D.

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Lexington, KY 40502

SUMMARY

Data Scientist with 5+ years of experience in causal inference, machine learning, and statistical analysis. Skilled in designing and conducting experiments to improve business outcomes, developing predictive models, and collaborating with cross-functional teams. Expertise in improving product quality through data-driven decision-making, building end-to-end data pipelines, and delivering actionable insights to stakeholders.

EDUCATION

Ph.D. Political Science, University of Kentucky — May 2023
- Fields: International Relations and Quantitative Methodology
- Dissertation: *The UN-Intended Effects of Risky Mandates on United Nations Peacekeeping*
  - Conducted analysis of 1.5 million observations to assess United Nations policy effects
  - Developed econometric models leading to actionable insights into UN policy impacts

M.A. Political Science, University of Kentucky — May 2022
- Fields: International Relations and Quantitative Methodology

B.A. International Studies, Covenant College — May 2019
- Dean's List Fall 2015 - Spring 2019 and Graduated Magna Cum Laude

PROGRAMMING LANGUAGES & SOFTWARE

Advanced: Python, R, STATA, SQL (Postgres)
Intermediate: Git, Power BI, SAS, Tableau
Beginner: CSS, Docker, Golang, HTML

WORK EXPERIENCE

Science Applications International Corp (SAIC) - Reston, VA (Remote) — October 2023 - Present
Data Scientist
- Evaluated 20+ commercial facial, iris, and fingerprint recognition algorithms, identifying performance weaknesses to inform deployment decisions for mission-critical systems
- Built a Python data app that reduced data cleaning and validation time, saving more than 160 hours of manual work annually
- Authored 5+ analytic reports, translating complex AI performance data into actionable insights for non-technical stakeholders, improving decision-making efficiency
- Collaborated with software and data science teams to deploy and test facial recognition models, fostering cross-functional solutions to streamline deployment and model evaluation workflows
- Ensured compliance with data security regulations when handling biometric data and generating reports, reducing risks associated with sensitive information breaches

University of Kentucky - Lexington, KY — August 2019 - May 2023
Graduate Researcher
- Developed 15+ innovative quantitative research projects, including advanced modeling techniques in STATA and R
- Conducted geospatial analysis to inform decision-making on local troop movements
- Delivered research findings independently, aligning with tight deadlines and strategic objectives

University of Kentucky - Lexington, KY — August 2019 - May 2023
Primary Instructor

- Condensed intricate political theories into succinct lessons for classes of 50-60 undergraduates
- Taught graduate statistics to 10 students, covering advanced methods and statistical software
- Mentored undergraduate and graduate students in quantitative research methods, statistical software, and project design

United Way of Greater Chattanooga - Chattanooga, TN January 2018 - May 2018
Data Hub Intern

- Generated GIS maps for Chattanooga neighborhood and crime data for community advocacy
- Offered housing trend insights to Hamilton County officials through impactful GIS visualizations
- Collaborated with government officials and nonprofits to align GIS analyses with community needs and policy discussions

SELECTED PROJECTS

Predicting Bourbon Availability with ML [GitHub]

- Built an end-to-end machine learning pipeline to predict Buffalo Trace bourbon availability, including web scraping, data cleaning, and feature engineering
- Experimented with and optimized multiple models (logistic regression, SVM, random forests, XGBoost, and Keras neural network), selecting the highest-performing model based on accuracy and precision
- Deployed the final model to GitHub with automated daily monitoring to evaluate and maintain prediction performance

Local Peacekeeper Deployments [GitHub]

- Collected and processed geo-spatial data on local peacekeeper deployments to analyze their movement and response patterns
- Applied count models to test how peacekeepers respond to triggers such as local violent conflicts, quantifying troop deployment decisions
- Identified and visualized key factors influencing deployment patterns, providing actionable insights into peacekeeping strategies.

United Nations Policy Consequences [GitHub] Assessment of mission mandate conditional effects

- Developed an original measure of mission risk by analyzing tasks outlined in United Nations peacekeeping mandates
- Modeled how mission risk affects monthly peacekeeping troop contributions, demonstrating that higher risk decreases contributions
- Revealed a critical insight that countries contribute fewer troops to high-risk missions, highlighting a mismatch between peacekeeping needs and contributions

SKILLS

AWS, Causal Inference, Data Pipelines, Data Visualization, Data Wrangling, Experimentation, Keras, LaTeX, Machine Learning, Matplotlib, Numpy, Pandas, PySpark, PyTorch, Quantitative Analysis, Regression Analysis, Seaborn, Spanish, Scikit-Learn, Statistical/ML Model Development, Tensorflow, Testing and Validation, XGBoost