Davut Ayan, PhD

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DATA SCIENTIST:

Dynamic Data Scientist with over 5 years of experience in data science and economic research. Expert in econometrics, machine learning, and causal models to derive strategic insights and drive business decisions. Successfully enhanced marketing efforts and business processes, leading to a 20% increase in campaign effectiveness. Highly organized and detail-oriented, leveraging a robust background in economics and business intelligence to deliver actionable solutions and optimize performance.

TECHNICAL SKILLS:

Programming Tools: - Python, R, STATA, SQL, RSpark, PySpark, Tableau, Power BI, R Shiny, Streamlit, Pandas, NumPy, Scikit-learn, Keras, TensorFlow, Hadoop, MLlib, H2O, Databricks, AWS, Azure

Statistical Modeling: - Causal Inference Models, Difference-in-Differences, Instrumental Variables, Synthetic Control, Regression Discontinuity, Propensity Score Matching, Inverse Probability Weighting (IPW), Experimentation, A/B Testing, Survival Analysis

Machine Learning and AI: - Machine Learning, Deep Learning, Supervised Learning, Classification, Regression, Logistic Regression, Random Forests, Gradient Boosting, XGBoost, Time Series Forecasting, Unsupervised Learning, Factor Analysis, Principal Component Analysis, Cluster Analysis, Natural Language Processing (NLP), LLM, Generative AI

Marketing Analytics: - Lifetime Value, RFM, Basket Analysis, Segmentation, Predictive Modeling, Churn Modeling, Marketing Mix Modeling (MMM)

PROFESSIONAL EXPERIENCE:

Senior Data Scientist, Marketing Sciences, Horizon Media **Mar 2022 - Present**

- Leveraged big data cloud platforms to analyze audience demographics and consumer behavior, guiding strategic marketing decisions. Delivered insights that led to a 10% increase in customer conversion and campaign effectiveness. Developed and deployed predictive models using supervised machine learning techniques, including lifetime value models, churn models, and look-alike models, resulting in a 15% optimization of marketing spend.

- Applied advanced causal models such as Difference-in-Differences and Propensity Score Matching to evaluate post-campaign performance. Enhanced audience targeting and campaign effectiveness with unsupervised machine learning techniques.

- Engineered high-performance scripts for generating balancing weights and balanced random samples, processing datasets of over 100 million observations in seconds. This innovation reduced processing time and cost by 95% compared to traditional methods.

Postdoctoral Researcher, IPSR, University of Kansas **Feb 2021 - Mar 2022**

- Conducted advanced research on regression discontinuity methodologies, applying them to a state-level dataset to assess the causal impact of state government party affiliation on social safety programs.

- Investigated the impact of Medicaid expansion on healthcare utilization and state expenditures, applying synthetic control methods and contributing to multiple publications that informed state-level healthcare policies. Highlighted expertise in rigorous data collection, data mining, feature engineering, visualization, and data-driven research methodologies.

- Proficiently navigated diverse data sources, utilizing R for data extraction, transformation, and analysis. Conducted data analysis using regressions in STATA, developed and managed a comprehensive data dictionary. Collaborated on modeling methodologies to determine global researcher numbers, contributing to a peer-reviewed journal publication.

EDUCATION:

Doctor of Philosophy (PhD), Economics, University of Kansas, KS
Master of Arts (MA), Economics, University of Kansas, KS
Bachelors Degree (BS), Industrial and Systems Engineering, National Defense University

PUBLICATIONS:

Ayan, D, Haak, L, Ginther, DK. How many people in the world do research and development? Global Policy, 2023. https://onlinelibrary.wiley.com/doi/full/10.1111/1758-5899.13182

Ginther, DK, **Ayan, D,** Slusky, DJG. Economic Costs to Kansas Due to State's Failure to Expand Medicaid. The Reach Foundation, 2022. https://kuscholarworks.ku.edu/handle/1808/32851

Ginther, DK, **Ayan, D,** Slusky, DJG. The Unexpected Costs of Not Expanding Medicaid in Kansas. Institute for Policy & Social Research at University of Kansas and Reach Foundation, 2022. https://ipsr.unit.ku.edu/CSTEP/PDF/Medicaid_Brief_2022.pdf