github
website
linkedin

Dominique Lockett

Ph.D Candidate/Computational Scientist

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A computational scientist with a diverse range of methodological expertise, including experimental design, automated ETL pipeline development, and the optimization, interpretation, and visualization of sophisticated models using cutting-edge R and Python tools. Equipped with the unique ability to break down and simplify complex techniques for diverse audiences, making technical concepts more accessible. An excellent candidate for organizations seeking a data-driven professional with a strong foundation in probability theory, statistics, and hands-on experience in contemporary machine learning and deep learning techniques.

Skills

Programming Languages	Python | R | MATLAB
Web Technologies & Databases	JavaScript | HTML | CSS | PostgreSQL | MySQL | SQLite | RSQLite
Frameworks & Libraries	Jupyter | BeautifulSoup | Numpy | Pandas | Scikit-learn | TensorFlow | PyTorch | Keras | XGBoost | LightGBM | sqlalchemy
Tools, Software & Formatting	ArcGIS | Stata | Git | LaTeX | MarkDown

Awards and certificates

Research seed grant	Washington University in Saint Louis	November 2020
Diversity fellowship	Saint Louis University	June 2016
Fundamentals of G.I.S.	University of California, Davis	September 2020

Projects

News Discourse Analysis via Advanced NLP Techniques **June 2020-present**

Big data, causal inference, data engineering, political communication

- Assembled a unique dataset of Twitter data to investigate communication styles across 30 professional news outlets
- Developed a robust ETL pipeline using Python tools to process billions of tweets
- Employed advanced NLP techniques, including sentiment analysis and topic modeling, to analyze data
- Contributed to a book project, elucidating real-world implications of news organization features using causal inference methods

Political Advertisement Perception Study with Advanced Analytics **December 2021**

Data engineering, data visualization, conjoint experiment, political advertising

- Investigated user perceptions of political ads on social media using advanced statistical methods
- Applied conjoint and survey experiments to analyze user preferences for political ad regulation
- Translated complex statistical findings into compelling visualizations for broader comprehension
- Managed data lifecycle, from initial receipt to submission for review at PNAS

Misinformation Correction Effectiveness: Design and Implementation **September 2022**

Research design, data analysis, data visualization, grant writing, misinformation

- Devised a novel survey experiment to assess the efficacy of misinformation corrections
- Secured IRB approval and pre-registered experimental expectations to maintain research integrity
- Implemented a pilot survey and deployed the final survey to a diverse, nationally-representative sample

Analyzing Misinformation Effects **July 2022**

RESEARCH DESIGN, DATA ANALYSIS, DATA VISUALIZATION, PUBLICATION, MISINFORMATION

- Developed a novel research framework integrating experimental and observational data to investigate misinformation effects
- Employed Python and R for advanced data analysis, using regression techniques and controlled experiments to evaluate causal factors
- Ensured validity and generalizability by using nationally representative samples in the analysis
- Leveraged Jupyter Notebooks and ggplot2 for effective data exploration and visualization, uncovering underlying patterns in misinformation consumption
- Fostered transparency and reproducibility by submitting research data to the Harvard Dataverse repository

Experience

Instructor **June 2020 — Present**

Washington University in Saint Louis Saint Louis, MO

- Designed and developed curriculum and materials for a virtual learning environment to teach Python for data analysis, git, JupyterLab, and other relevant technologies
- Instructed and mentored students with varying coding experience levels to help them understand and apply programming concepts effectively
- Developed and administered assessments to evaluate students' progress and provide personalized feedback
- Adapted instructional strategies and methods to meet the needs of diverse learners and ensure optimal learning outcomes

Research Assistant **June 2018 — Present**

Washington University in Saint Louis Saint Louis, MO

- Developed and implemented ensemble machine learning techniques, such as Bayesian model averaging, to demonstrate the efficacy of the R package (`EBMAforecast`) of predicting heterogeneous treatment effects
- Optimized model performance through hyper-parameter tuning and the selection of appropriate feature sets, resulting in improved predictive accuracy.
- Successfully utilized the ensemble logit model to achieve 97% predictive accuracy in identifying individuals likely to believe in fake news

Vice Chair of Special Business District **March 2021 — December 2022**

Tower Grove South Saint Louis, MO

- Collaborated with stakeholders to oversee the allocation of property taxes towards safety and cleanliness measures in Tower Grove South neighborhood in St. Louis
- Redesigned and maintained the special business district's website to improve the user experience and provide relevant information to the public
- Represented the district at monthly meetings and addressed public inquiries about neighborhood improvement projects and services

Publications

Guess, Andrew, Dominique Lockett , Benjamin Lyons, Brendan Nyhan, Jacob M. Montgomery, and Jason Reifler. 2020. "'Fake news' may have limited effects beyond increasing beliefs in false claims." The Misinformation Review.

Edelson, Laura, Dominique Lockett , Jacob Montgomery, Damon Mccoy, Tobias Lauinger, Celia Guillard"US Public Opinion Towards Platform Regulation of Political Advertisements: Discontent and Consensus for Reform" (Forthcoming)

Lockett, Dominique. Using Objectivity to Improve Argument Evaluations. (Forthcoming)

Education

Ph.D. in Political science	Washington University in Saint Louis	August 2017 — Present
M.A. in Political Science	Saint Louis University	August 2016 — May 2017
B.A. Political Science (Cum Laude)	Saint Louis University	August 2013 — May 2016
A.A. Communication	Ivy Tech Community College	August 2009 — May 2012