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# Jacob Ford

## Senior Data Scientist

Portfolio: [jake-ford.github.io](https://jake-ford.github.io)  
[github.com/Jake-Ford](https://github.com/Jake-Ford)  
[linkedin.com/in/jacob-ford-80775662](https://linkedin.com/in/jacob-ford-80775662)

### TECHNICAL SKILLS

|                              |  |
|------------------------------|--|
| <b>Tools and Languages</b>   | Python, MLOps, LLM and RAG, R, Git, DataRobot, SQL, Snowflake Cortex |
| <b>Quantitative Research</b> | Machine Learning, Model Design and Development, Geospatial Analysis  |
| <b>Project Management</b>    | Agile, Technical Project Leadership, ML Product Management           |

### EXPERIENCE

#### SENIOR DATA SCIENTIST

January 2023 — Present

*Solstice*

*Cambridge, MA*

- Secured \$1 million from Google to develop an ML based green financing qualification tool, EnergyScore, leading technical project management on data collection, model design and MLOps strategy.
- Led development of a Retrieval-Augmented Generation (RAG) chatbot for solar policy using Snowflake Cortex and custom embeddings, improving internal search across regulatory texts.
- Developed a custom churn prediction model to segment customers into clusters of risk, leading to 39% decrease in churn for high risk customers.
- Built a document classification model using PyTorch and deployed it via AWS SageMaker, ECR, and Lambda, incorporating Docker for scalable and efficient serving of ML predictions. Achieved a 70% reduction in manual review of LMI documents, improving operational efficiency.

#### DATA SCIENTIST

March 2022 — January 2023

*EnergyAllies (formerly Solstice Initiative)*

*Cambridge, MA*

- Conducted and published machine learning bias research in partnership with Google engineers and bias experts, expanding traditionally metrics to additional protected classes like homeowners and education levels.
- Lead author on research analyzing priorities in community solar funded by DOE Solar Energy Technologies Office.
- Designed survey weighting methodology from primary data and multinomial logistic regression model to test strength of relationships.

#### Transportation Modeler

February 2020 — March 2022

*Durham-Carrboro-Chapel Hill Metropolitan Planning Organization Durham, NC*

*Durham, NC*

- Maintain transportation model predicting multimodal travel volume for analysis of highway, transit, and pedestrian networks.
- Apply advanced techniques like iterative proportional fitting, neural networks, and decision trees to determine trip numbers and purposes.

#### Program Evaluator

July 2018 — February 2020

*North Carolina General Assembly,*

*Raleigh, NC*

- Conducted state policy evaluations and recommend programmatic solutions within legislative in-house watchdog agency.
- Identified \$3.7 million in unnecessary state spending resulting from an errant matching mechanism for hurricane relief funding.

### EDUCATION

**Master of Public Policy**, Georgetown University

May 2018

*Editor-in-chief, Georgetown Public Policy Review; Baker Innovation Scholar; Research Fellow, CROCUS*

**Bachelor of Science in Mathematics**, Allegheny College

May 2014

### PUBLICATIONS

- Zoie T. Diana, Madeleine Milne, Jacob Ford, Ron Rubinovitz, Andrew Turner, Chelsea M. Rochman, "A Paint Library Of Plastic Particles (PLOPP): Fourier transform infrared spectral analysis of paint microplastics" In preparation for Analytical Chemistry.
- Jacob Ford, "Fairness in Focus: Insights into Bias Within Machine Learning Risk Evaluations and Established Credit Models." Management System Engineering (forthcoming, accepted with minor revisions), expected April 2025.
- Zahra Thani, Winslow Lewis, Liz Neyens, Jacob Ford\*, "Priorities' Role in Community Solar: Survey-Based Study and Payment Performance Analysis", Proceedings of the 52nd American Solar Energy Society National Solar Conference 2023. ASES SOLAR 2023. Springer Proceedings in Energy. Springer, Cham., August 2023.
- Allison LaFave, Emily Kelly, and Jacob Ford, "Reasons High School Students Change Their Educational Setting", National Center for Education Statistics (NCES), series NCES 2019-119, November 2018.
- Allison LaFave, Emily Kelly, and Jacob Ford, "Factors that Influence Student College Choice", National Center for Education Statistics (NCES), series NCES 2018-119, June 2018.