

# George W. Williford, Ph.D.

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[github.com/gwilliford](https://github.com/gwilliford) | [linkedin.com/in/gwilliford/](https://linkedin.com/in/gwilliford/) | [georgewilliford.com](https://georgewilliford.com)

## SKILLS

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- **Software and Languages:** R, Python, Jupyter, SQL, TensorFlow, Keras, PyTorch, Stata, Stan
- **Packages:** NumPy, pandas, scikit-learn, matplotlib, seaborn, tidyverse, dplyr, ggplot2
- **Statistical Methods:** machine learning, regression, generalized linear models, time series, longitudinal/panel data, survival analysis, multilevel/hierarchical models, Bayesian statistics, forecasting and predictive modeling, data visualization, missing data imputation, deep learning, neural networks
- **Software Development:** Currently developing an original R package to implement proportional hazards cure models (available at [github.com/gwilliford/tvcure](https://github.com/gwilliford/tvcure))
- **Other Skills:** Git(Hub), high performance computing, Qualtrics, Amazon Mechanical Turk, Google Colab, human subjects training

## EXPERIENCE

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**Health Data Science Fellow** May 2020 - Present

*Insight*, Boston, MA

- Developed a computer vision model to classify brain tumors by type
- Used a convolutional neural network to achieve 95% accuracy
- Implemented in Python using Tensorflow and Keras

**Graduate Student Researcher** August 2014 - Present

*University of Georgia*, Athens, GA

- Published 3 articles using machine learning techniques in highly regarded peer-reviewed journals
- Wrote a methodological dissertation introducing the proportional hazards cure model to political science and wrote accompanying software for R ([github.com/gwilliford/tvcure](https://github.com/gwilliford/tvcure))
- Improved forecasting of military conflicts using Bayesian logistic regression, ensemble learning, and resampling methods to predict 82% of conflicts correctly (see [github.com/gwilliford/Conflict-Forecasting](https://github.com/gwilliford/Conflict-Forecasting))
- Collected and constructed an original dataset on negotiations for over 1,200 military conflicts
- Examined psychological factors that lead civilians and military leaders to support use of weapons of mass destruction by writing a survey that implemented A/B Testing using Qualtrics and Amazon Mechanical Turk

**Teaching Assistant, Summer Program in Quantitative Methods** May 2016 - August 2019

*Interuniversity Consortium on Political and Social Research*, University of Michigan, Ann Arbor

- Taught 4 week condensed semester-length courses on Generalized Linear Models, Maximum Likelihood Estimation, Survival Analysis, Panel Data and Multilevel Models
- Taught students to implement new methods in R and Stata by creating and delivering 10 original lectures and labs
- Assisted classes of up to 50 students with understanding material through written and verbal feedback
- Additional experience teaching undergraduates about international conflict and American politics

## EDUCATION

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**The University of Georgia**

Ph.D. Candidate in Political Science and International Affairs

May 2021

**Vanderbilt University**

B.A. in Political Science

May 2014