

# Zachary M. Jones

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## Employment

Moore/Sloan Data Science Postdoctoral Fellowship, eScience Institute, *University of Washington*, 2017-2019.

## Education

Ph.D. Political Science, *Pennsylvania State University*, 2017.

M.A. Political Science, *University of Georgia*, 2013.

B.A. Political Science and Philosophy, *Georgia Southern University*, 2010.

## Research

### Peer-Reviewed Publications

1. Is There More Violence in the Middle?, *American Journal of Political Science* (2017), Zachary M. Jones and Yonatan Lupu.
2. [edarf: Exploratory Data Analysis using Random Forests](#), *Journal of Open Source Software* (2016), Zachary M. Jones and Fridolin Linder.
3. [mlr: Machine Learning in R](#), *Journal of Machine Learning Research* (2016), Bernd Bischl, Michel Lang, Lars Kotthoff, Julia Schiffner, Jakob Richter, Erich Studerus, Giuseppe Casalicchio and Zachary M. Jones.
4. [Enhancing Validity in Observational Settings When Replication is Not Possible](#), *Political Science Research and Methods* (2016), Christopher J. Fariss and Zachary M. Jones.
5. [Human Rights Texts: Converting Human Rights Primary Source Documents into Data](#), *PLoS One* (2015), Christopher J. Fariss, Fridolin Linder, Zachary M. Jones, Charles Crabtree, Megan Biek, Ana-Sophia Ross, Taranamol Kaur, and Michael Tsai.
6. [An Empirical Evaluation of Explanations for State Repression](#), *American Political Science Review* (2014), Daniel W. Hill Jr. and Zachary M. Jones.

### Working Papers

1. Methods for Interpretable Machine Learning: A Review with Emphasis on Model-Agnostic Methods, Giuseppe Casalicchio, Quay Au, Christoph Molnar, Bernd Bischl, and Zachary M. Jones.
2. Interpretable Statistical Learning Methods, Zachary M. Jones.

3. [Inference on the Effects of Observed Features in Latent Space Models for Networks](#), Zachary M. Jones, Matthew Denny, Bruce Desmarais, and Hanna Wallach.
4. [mmpf: Monte-Carlo Methods for Prediction Functions](#), Zachary M. Jones.
5. [fanova: ANOVA Decomposition of Prediction Functions](#), Zachary M. Jones.

## Editor-Reviewed Publications

1. [Git/GitHub, Transparency, and Legitimacy in Quantitative Research](#), *The Political Methodologist* (2013).

## Software

[fanova](#): Functional Analysis of Variance ([author and creator](#))

This package implements the generalized functional ANOVA as described in Hooker (2007), which finds the best additive decomposition of a regression function using functions of a user-specified dimension, e.g., using at most two-way interactions.

[mmpf](#): Monte-Carlo Methods for Prediction Functions ([author and creator](#))

Contains functions which marginalize prediction functions (e.g., partial dependence) as well as functions to compute permutation importance.

[mlr](#): Machine Learning with R ([author and contributor](#))

Interface to a large number of classification and regression techniques, including machine-readable parameter descriptions. There is also an experimental extension for survival analysis, clustering and general, example-specific cost-sensitive learning. Generic resampling, including cross-validation, bootstrapping and subsampling. Hyperparameter tuning with modern optimization techniques, for single- and multi-objective problems. Filter and wrapper methods for feature selection. Extension of basic learners with additional operations common in machine learning, also allowing for easy nested resampling. Most operations can be parallelized.

[edarf](#): Exploratory Data Analysis using Random Forests ([author and creator](#))

Functions useful for exploratory data analysis using random forests which can be used to compute multivariate partial dependence, observation, class, and variable-wise marginal and joint permutation importance as well as observation-specific measures of distance (supervised or unsupervised). All of the aforementioned functions are accompanied by ggplot2 plotting functions.

## Invited Talks

1. [Interpretable Statistical Learning Methods](#), Zachary M. Jones, *University of Colorado Boulder* (2016).
2. [Data Mining as Exploratory Data Analysis](#), Zachary M. Jones, *International Methods Colloquium* (2015).

## Conference Presentations

1. [Inference on the Effects of Observed Features in Latent Space Models for Networks](#), Zachary M. Jones, *Society for Political Methodology* (2016).
2. [Inference on the Effects of Observed Features in Latent Space Models for Networks](#), Zachary M. Jones, *Political Networks* (2016).
3. [Data Mining as Exploratory Data Analysis](#), Zachary M. Jones, *Society for Political Methodology* (2015).
4. [An Empirical Evaluation of Explanations for State Repression](#), Daniel W. Hill Jr. and Zachary M. Jones, *Peace Science Society* (2013).

## Fellowships and Awards

Google Summer of Code Fellowship, [mlr: Machine Learning in R](#) (2015).

Jesse M. MacKnight Memorial Scholarship, *Pennsylvania State University* (2014-2015).

Robert W. Graham Endowed Fellowship, *Pennsylvania State University* (2013).

Carlos A. Pelanda Paper Award, *University of Georgia* (2011).

## Teaching

1. Social Data Analytics, *Pennsylvania State University* (2016) (graduate).
2. Advanced Maximum Likelihood, *ICPSR Summer Program* (2014) (assistant).
3. Modern Warfare, *University of Georgia* (2012).

## Service

### Reviewing

*Political Science Research and Methods* (1), *American Political Science Review* (3), *British Journal of Political Science* (1), *Journal of Politics* (4), *Political Analysis* (3), *American Journal of Political Science* (2), *Journal of Conflict Resolution* (2), *Journal of Peace Research* (2), *Conflict Management and Peace Science* (2), *International Interactions* (2)

## References

1. Bruce Desmarais: [bdesmarais@psu.edu](mailto:bdesmarais@psu.edu)  
Associate Professor of Political Science, *Pennsylvania State University*
2. Christopher Zorn: [zorn@psu.edu](mailto:zorn@psu.edu)  
Liberal Arts Research Professor of Political Science and Sociology, *Pennsylvania State University*
3. Christopher J. Fariss: [cjf0006@gmail.com](mailto:cjf0006@gmail.com)  
Assistant Professor of Political Science, *University of Michigan*
4. Bumba Mukherjee: [sxm73@psu.edu](mailto:sxm73@psu.edu)  
Associate Professor of Political Science, *Pennsylvania State University*

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