

Benjamin J. Radford

POLITICAL SCIENTIST · DATA SCIENTIST

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Education

Duke University

PH.D. IN POLITICAL SCIENCE

Subfields: Security, Peace, & Conflict and Political Methodology

Automated Learning of Event Coding Dictionaries for Novel Domains with an Application to Cyberspace

Durham, NC

2016

University of North Carolina at Asheville

B.A. IN MATHEMATICS AND INTERNATIONAL STUDIES

Asheville, NC

2010

Research Experience

Principal Investigator & Principal Data Scientist

SOTERA DEFENSE SOLUTIONS CONTRACTED TO DARPA

• Principal Investigator for a data-driven cybersecurity attribution program of DARPA I2O.

• Principal Data Scientist on *Network Defense*, a DARPA I2O program on machine learning for unsupervised cybersecurity applications.

Arlington, VA

2016–

Senior Data Scientist

CAERUS ASSOCIATES CONTRACTED TO DARPA

• Senior Data Scientist on *Network Defense*, a DARPA I2O program on machine learning for unsupervised cybersecurity applications.

Arlington, VA

2015–2016

Research Assistant to Professor Michael D. Ward

DUKE UNIVERSITY

• Spatial-temporal modeling for C-IED, a force protection program of the Office of Naval Research.

• Statistical forecasting for ICEWS, the Integrated Crisis Early Warning System.

Durham, NC

2012–2015

Research Assistant to Professor Joseph M. Grieco

DUKE UNIVERSITY

Durham, NC

2012–2015

Intern

JAMES MARTIN CENTER FOR NONPROLIFERATION STUDIES

Washington, D.C.

2008

Publications

“Network Traffic Anomaly Detection Using Recurrent Neural Networks”

Proceedings of the 2017 MSS National Symposium on Sensor & Data Fusion

with Leonardo Apolonio, Antonio Trias, and Jim A. Simpsons

2017

“Enemy at the Gates: Variation in Economic Growth from Civil Conflict.”

Journal of Conflict Resolution.

with Shahryar Minhas.

2016

“Small-scale prediction of IEDs in Afghanistan using split-population duration regression”

Submitted to the Office of Naval Research.

with Andreas Beger and Michael D. Ward.

2015

“Comparing GDELT and ICEWS Event Data”

Published online via Research Gate.

with Michael D. Ward, Andreas Beger, Josh Cutler, Matthew Dickenson, and Cassy Dorff.

2013

- “The Evolution of US Policy towards Iran’s Nuclear Program: Lessons for the Obama Administration” 2010
UNC Asheville Journal of Undergraduate Research.
- “Iran Likely to Take Accusatory Stance at CWC Review Conference” 2008
WMD Insights (April): 39-43.
- “Summary of Recent United Nations Security Council, European Union, and United States Sanctions Against Iran” 2008
WMD Insights (April): 44-50.
 with Leonard Spector.
- “Algeria, Emirates Plan Nonproliferation-Friendly Nuclear Programs; Egypt Keeps Fuel Cycle Options Open, Rejects Expanded IAEA Monitoring” 2008
WMD Insights (June): 2-7.
 with Leonard Spector.

Selected Working Papers

- “Automated Dictionary Generation for Political Event Coding”
 Under review.
- “Varieties of Authoritarianism and Peace through Trade, 1950-1999”
 Working paper.
 with Joseph M. Grieco, Christopher F. Gelpi, and Stephen Morgan.
- “Embargoes and the Regional Small Arms Trade”
 Revise and resubmit.

Software

- mmtsne** 2017
 A package for estimating *multiple maps t-distributed stochastic neighbor embedding* (multiple maps t-SNE) models in R.
 Open source and available on CRAN: <https://cran.r-project.org/package=mmtsne>.

Teaching Experience

- Invited Lecture** Arlington, VA
 GEORGE MASON UNIVERSITY Nov. 2017
 “Clustering techniques for unsupervised machine learning.”
- Teaching Assistant** for Professor Kyle Beardsley Durham, NC
 DUKE UNIVERSITY 2013
 POLSCI 130: *Introduction to Political Inquiry*

Conferences

- Presenter** Springfield, VA
 MILITARY SENSING SYMPOSIUM, NATIONAL SYMPOSIUM ON SENSOR & DATA FUSION Oct. 2017
 “Network Traffic Anomaly Detection Using Recurrent Neural Networks”
- Invited Talk** Washington, D.C.
 CONFERENCE ON APPLIED STATISTICS IN DEFENSE, AMERICAN STATISTICAL ASSOCIATION 2016
 “Cyber Language: Enhancing Cybersecurity Through Statistical and Natural Language Processing Techniques”
- Conference Paper** New Orleans, LA
 ANNUAL MEETING OF THE INTERNATIONAL STUDIES ASSOCIATION 2015
 “Small-scale prediction of IEDs in Afghanistan using split-population duration regression”

Presenter

ANNUAL MEETING OF THE AMERICAN POLITICAL SCIENCE ASSOCIATION
 “Enemy at the Gates: Variation in Economic Growth from Civil Conflict”

San Francisco, CA
 2015

Presenter

ANNUAL MEETING OF THE MIDWEST POLITICAL SCIENCE ASSOCIATION
 “Enemy at the Gates: Variation in Economic Growth from Civil Conflict”

Chicago, IL
 2015

Presenter

DUKE-UNC INTERNATIONAL RELATIONS WORKSHOP
 “Embargoes and the Regional Small Arms Trade”

Durham, NC
 2014

Presenter

ANNUAL MEETING OF THE MIDWEST POLITICAL SCIENCE ASSOCIATION
 “Varieties of Authoritarianism and Peace through Trade, 1950-1999”

Chicago, IL
 2014

Presenter

ANNUAL MEETING OF THE MIDWEST POLITICAL SCIENCE ASSOCIATION
 “Autocracy Type and Conflict Outcome: Assessing the Relative Performance of Personalist Regimes in War”

Chicago, IL
 2013

Presenter

ANNUAL MEETING OF THE SOUTHERN POLITICAL SCIENCE ASSOCIATION
 “Primed for Defense: How I Learned to Start Worrying and Love the Bomb”

Orlando, FL
 2013

Academic Service

Discussant

ANNUAL MEETING OF THE AMERICAN POLITICAL SCIENCE ASSOCIATION
 Panel on Prediction

San Francisco, CA
 2015

Reviewer

INTERNATIONAL STUDIES REVIEW

2015

Grants, Honors, & Awards

2011–2016	Graduate Studies Fellowship , Duke University	<i>Durham, NC</i>
2015	Graduate School Conference Travel Fellowship , Duke University	<i>Durham, NC</i>
2014	Graduate School Conference Travel Fellowship , Duke University	<i>Durham, NC</i>
2013	Graduate School Conference Travel Fellowship , Duke University	<i>Durham, NC</i>
2013	Finalist , Data Visualization Contest, Duke University	<i>Durham, NC</i>
2010	Graduated summa cum laude , University of North Carolina at Asheville	<i>Asheville, NC</i>
2010	Top Graduating Math Student , University of North Carolina at Asheville	<i>Asheville, NC</i>
2010	Distinction in International Studies , University of North Carolina at Asheville	<i>Asheville, NC</i>
2010	Finalist , Hasbro NERF <i>Battle of the Ads</i>	

Programming

- R
- Python
- Scala
- Spark
- \LaTeX
- MapReduce
- Hadoop & HDFS
- SQL

Research Interests

- Political methodology
- Automated event data coding
- Political security and conflict
- Forecasting
- Machine learning
- Cybersecurity