

# Benjamin J. Radford

POLITICAL SCIENTIST · DATA SCIENTIST

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## Professional Experience

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### Assistant Professor

UNIVERSITY OF NORTH CAROLINA CHARLOTTE

Public Policy Ph.D. Program & Political Science and Public Administration

Charlotte, NC

2019–Present

### President & Chief Scientist

LEVELUP RESEARCH, LLC

DARPA SafeDocs & DARPA Hybrid Fusion

Alexandria, VA

2018–Present

### Principal Data Scientist

SOTERA DEFENSE SOLUTIONS / KEYW CORPORATION

DARPA cybersecurity attribution program

Arlington, VA

2017–2018

### Senior Data Scientist

CAERUS ASSOCIATES / CYBRAICS

DARPA Network Defense

Arlington, VA

2015–2016

## Education

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### Ph.D. in Political Science

DUKE UNIVERSITY

Durham, NC

2016

### M.A. in Political Science

DUKE UNIVERSITY

Durham, NC

2013

### B.A. in Mathematics and International Studies

UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE

Asheville, NC

2010

## Grants & Contracts

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**Co-PI**, UNCC 12-Month Planning Grant (\$25,000)

2020

**Subject Matter Expert**, DARPA SafeDocs

2019–2022

**Co-PI**, DARPA Hybrid Fusion

2019–2020

**Co-PI**, DARPA contract

2019

**PI**, DARPA contract

2017–2018

**Graduate Studies Fellowship**, Duke University

2011–2016

**Graduate School Conference Travel Fellowship**, Duke University

2015, 14, 13

## Peer-Reviewed Publications

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“Multitask Models for Supervised Protest Detection in Texts”

2019

*Working Notes of CLEF 2019.*

“Automated Dictionary Generation for Political Event Coding”

2019

*Political Science Research and Methods.*

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

2017

*Journal of Conflict Resolution*: 61(10):2105–2129.

with Shahryar Minhas.

## Technical and Policy Publications

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- “Anomaly Detection in Cyber Network Data Using a Cyber Language Approach”** 2018  
Prepared for the 2018 ASA Symposium on Data Science and Statistics. Available at arXiv:1808.10742.  
with Bartley D. Richardson, Shawn E. Davis, Keegan Hines, and David Pekarek.
- “Sequence Aggregation Rules for Anomaly Detection in Computer Network Traffic”** 2018  
Prepared for the 2018 ASA Symposium on Data Science and Statistics. Available at arXiv:1805.03735.  
with Bartley D. Richardson and Shawn E. Davis.
- “Network Traffic Anomaly Detection Using Recurrent Neural Networks”** 2017  
*Proceedings of the 2017 MSS National Symposium on Sensor & Data Fusion*. Available at arXiv:1803.10769.  
with Leonardo Apolonio, Antonio Trias, and Jim A. Simpson.
- “Small-scale prediction of IEDs in Afghanistan using split-population duration regression”** 2015  
Submitted to the Office of Naval Research.  
with Andreas Beger and Michael D. Ward.
- “Comparing GDELT and ICEWS Event Data”** 2013  
Published online. Available at Research Gate.  
with Michael D. Ward, Andreas Beger, Josh Cutler, Matthew Dickenson, and Cassy Dorff.
- “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.

## Software

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- 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>

## Invited Talks

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- Georgia Tech School of Electrical and Computer Engineering** 2019  
*Machine Learning Approaches for Cybersecurity Incident Measurement*
- DC Digital Analytics** 2018  
*Multilingual Text Classification with Multitask Neural Networks*
- Symposium on Data Science and Statistics, American Statistical Association** 2018  
*Network Traffic Anomaly Detection Using Recurrent Neural Networks*
- Conference on Applied Statistics in Defense, American Statistical Association** 2016  
*Cyberlanguage: Enhancing cybersecurity through statistical and natural language processing techniques*

## Working Papers

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- “0-BlinC: Zero-Shot Bilingual Text Classification without Translation” *Working paper*  
with Yaoyao Dai.
- “Multilingual Word Embedding for Zero-Shot Text Classification” *Working paper*  
with Yaoyao Dai.
- “Varieties of Authoritarianism and Peace through Trade, 1950-1999” *Under review*  
with Joseph Grieco and Christopher Gelpi.

## Works in Progress

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- “Structural Embedding for Explainable Word Vectors” *with Yaoyao Dai*
- “Forecasting Conflicts in Space and Time with Recurrent CNNs”
- “Inferring High-Resolution Latent Social Indicators from Unstructured Data”

## Conference Presentations

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- Annual Meeting of the Southern Political Science Association *2013, 2019, 2020*
- Annual Meeting of the American Political Science Association *2015, 2018*
- Conference on New Directions in Analyzing Text as Data *2018*
- Military Sensing Symposium, National Symposium on Sensor & Data Fusion *2017*
- Annual Meeting of the International Studies Association *2015*
- Annual Meeting of the Midwest Political Science Association *2013, 2014, 2015*
- Duke-UNC International Relations Workshop *2014*

## Teaching Experience

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- Instructor** *Charlotte, NC*  
UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE *2019–Present*
- GRAD 8009 & 6009: *Data Science for Social Scientific Inquiry*
  - GRAD 8101 & 8101: *Linear Regression*
  - POLS 3800: *Independent Study*
  - POLS 2220: *Political Science Research Methods*
- Invited Lecture** *Arlington, VA*  
GEORGE MASON UNIVERSITY *Nov. 2017*
- CSI 899: *Computational Research and Applications*
- Teaching Assistant** for Professor Kyle Beardsley *Durham, NC*  
DUKE UNIVERSITY *2013*
- POLSCI 130: *Introduction to Political Inquiry*

## Academic Service

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- Organizing Committee Member**, AESPEN LREC 2020 *2020*
- Reviewer**, IEEE: Transactions on Network and Service Management
- Reviewer**, Political Science Research & Methods
- Reviewer**, International Studies Review
- Chair & Discussant**, SPSA New Approaches in the Study of Terrorism and Civil War *2020*
- Discussant**, APSA Panel on Prediction *2015*
- Judge**, Northern Virginia Regional Science Fair *2019*

## Honors, & Awards

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<b>Finalist</b> , Data Visualization Contest, Duke University	2013
<b>Graduated summa cum laude</b> , University of North Carolina at Asheville	2010
<b>Top Graduating Math Student</b> , University of North Carolina at Asheville	2010
<b>Distinction in International Studies</b> , University of North Carolina at Asheville	2010
<b>Finalist</b> , Hasbro NERF <i>Battle of the Ads</i>	2010