

# 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, School of Data Science

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

## Research Interests

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**Substantive:** Security & conflict, cybersecurity, WMD, counter-proliferation, event data, measurement.

**Methodological:** Machine learning, Bayesian statistics, natural language processing, forecasting & prediction.

## Peer-Reviewed Publications

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“Few-Shot Upsampling for Protest Size Detection”

2021

*Findings of ACL*

with Andrew Halterman

“Regressing Location on Text for Probabilistic Geocoding”

2021

*Proceedings of the CASE Workshop at ACL-IJCNLP 2021*

“CASE 2021 Task 2: Zero-Shot Classification of Fine-Grained Sociopolitical Events with Transformer Models”

2021

*Proceedings of the CASE Workshop at ACL-IJCNLP 2021*

“Death by Political Party: The Relationship Between COVID-19 Deaths and Political Party Affiliation”

2021

*World Medical & Health Policy*. DOI:10.1002/wmh3.435

with Jingjing Gao.

- “Seeing the Forest and the Trees: Detection and Cross-Document Coreference Resolution of Militarized Interstate Disputes”** 2020  
*Proceedings of AESPEN 2020, LREC 2020: 35–41*
- “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.

## 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>

## 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.

## Grants & Contracts

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<b>Co-PI</b> , UNCC 12-Month Planning Grant (\$25,000)	2020
<b>Subject Matter Expert</b> , DARPA <i>SafeDocs</i>	2019–2022
<b>Co-PI</b> , DARPA <i>Hybrid Fusion</i>	2019–2020
<b>Co-PI</b> , DARPA contract	2019
<b>PI</b> , DARPA contract	2017–2018
<b>Graduate Studies Fellowship</b> , Duke University	2011–2016
<b>Graduate School Conference Travel Fellowship</b> , Duke University	2015, 14, 13

## Working Papers

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“High Resolution Conflict Forecasting with Spatial Convolutions and...” Previously presented at the ViEWS Prediction Competition.	<i>Under Review</i>
“Few-shot Upsampling for Protest Size Detection” with Andrew Halterman.	<i>Under Review</i>

## Works in Progress

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“0-BlinC: Zero-Shot Bilingual Text Classification without Translation” with Yaoyao Dai.	<i>Working paper</i>
“Digitizing COVID-19 Policy Documents and Measuring Plain Text Fidelity” with Jingjing Gao, Ivan Flores Martinez, and Jason Windett.	<i>Working paper</i>

## Invited Talks

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

## Conference Presentations

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Conference on Language Resources and Evaluation, AESPEN Workshop	2020
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

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

- GRAD 8009 & 6009: *Data Science for Social Scientific Inquiry*
- GRAD 6101 & 8101: *Linear Regression*
- POLS 3800: *Independent Study*
- POLS 2220: *Political Science Research Methods*

Charlotte, NC  
2019–Present

## Invited Lecture

GEORGE MASON UNIVERSITY

- CSI 899: *Computational Research and Applications*

Arlington, VA  
Nov. 2017

## Teaching Assistant for Professor Kyle Beardsley

DUKE UNIVERSITY

- POLSCI 130: *Introduction to Political Inquiry*

Durham, NC  
2013

## Academic Service

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<b>Program Committee Member, Reviewer</b> , CASE ACL 2021	2021
<b>Reviewer</b> , IEEE/ACM Transactions on Networking	2020
<b>Panel Chair</b> , UNC Charlotte Cybersecurity Symposium	2020
<b>Program Committee Member, Reviewer</b> , AESPEN LREC 2020	2020
<b>Reviewer</b> , British Journal of Political Science	2020
<b>Reviewer</b> , IEEE: Transactions on Network and Service Management	2019
<b>Reviewer</b> , Political Science Research & Methods	2018
<b>Reviewer</b> , International Studies Review	
<b>Chair &amp; Discussant</b> , SPSA New Approaches in the Study of Terrorism and Civil War	2020
<b>Discussant</b> , APSA Panel on Prediction	2015
<b>Judge</b> , 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