

# 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*: 13, 224–249. 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 |

## Invited Talks

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|---|------|
| Georgia Tech School of Electrical and Computer Engineering<br><i>Machine Learning Approaches for Cybersecurity Incident Measurement</i>   | 2019 |
| DC Digital Analytics<br><i>Multilingual Text Classification with Multitask Neural Networks</i>  | 2018 |
| Symposium on Data Science and Statistics, American Statistical Association<br><i>Network Traffic Anomaly Detection Using Recurrent Neural Networks</i>  | 2018 |
| Conference on Applied Statistics in Defense, American Statistical Association<br><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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|---|---------------|
| <b>Instructor</b>   | Charlotte, NC |
| UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE   | 2019–Present  |
| <ul style="list-style-type: none"><li>• GRAD 8009 &amp; 6009: <i>Data Science for Social Scientific Inquiry</i></li><li>• GRAD 6101 &amp; 8101: <i>Linear Regression</i></li><li>• POLS 3800: <i>Independent Study</i></li><li>• POLS 2220: <i>Political Science Research Methods</i></li></ul> |               |
| <b>Invited Lecture</b>  | Arlington, VA |
| GEORGE MASON UNIVERSITY   | Nov. 2017     |
| <ul style="list-style-type: none"><li>• CSI 899: <i>Computational Research and Applications</i></li></ul>   |               |
| <b>Teaching Assistant</b> for Professor Kyle Beardsley  | Durham, NC    |
| DUKE UNIVERSITY   | 2013          |
| <ul style="list-style-type: none"><li>• POLSCI 130: <i>Introduction to Political Inquiry</i></li></ul>  |               |

## Academic Service

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|   |      |
|---|------|
| <b>Program Committee Member, Reviewer</b> , CASE ACL 2021                                   | 2021 |
| <b>Reviewer</b> , International Interactions  | 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 |