

# Benjamin J. Radford

benradford.com

## Education

<b>Ph.D. in Political Science</b> <i>Duke University</i>	Durham, NC 2016
<b>M.A. in Political Science</b> <i>Duke University</i>	Durham, NC 2015
<b>B.A. in Mathematics and International Studies</b> <i>University of North Carolina at Asheville</i>	Asheville, NC 2010

## Academic Appointments

<b>Assistant Professor</b> <i>University of North Carolina Charlotte</i>	
Core Faculty, Public Policy Ph.D. Program	2019–Present
Core Faculty, Political Science and Public Administration	2019–Present
Affiliate, School of Data Science	2020–Present
Honors Faculty, Honors College	2022–Present

## Professional Experience

<b>President</b> <i>LevelUp Research, LLC</i>	Alexandria, VA 2018–Present
Subject Matter Expert for DARPA <i>SafeDocs</i>	2019–2022
Subject Matter Expert for DARPA <i>Hybrid Fusion</i>	2018–2019
<b>Subject Matter Expert</b> <i>Giant Oak, Inc.</i>	Arlington, VA 2022–Present
DARPA INCAS	
<b>Principal Data Scientist</b> <i>Sotera Defense Solutions (later KeyW Corporation)</i>	Arlington, VA 2016–2018
DARPA unnamed cybersecurity attribution program	
<b>Senior Data Scientist</b> <i>Caerus Associates (later Cybraics, Inc.)</i>	Arlington, VA 2015–2016
DARPA Network Defense	

## Refereed Publications

- Dai, Yaoyao, **Benjamin J. Radford**, and Andrew Halterman (2022). "Political Event Coding as Text-to-Text Sequence Generation". *Proceedings of the 5th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE)*. Abu Dhabi, United Arab Emirates (Hybrid). Association for Computational Linguistics, pp. 117–123.
- Hürriyetoğlu, Ali, Osman Mutlu, Firat Duruşan, Onur Uca, Alaeddin Gürel, **Benjamin J. Radford**, Yaoyao Dai, Hansi Hettiarachchi, Niklas Stoehr, Tadashi Nomoto, Milena Slavcheva, Francielle Vargas, Aaqib Javid, Fatih Beyhan, and Erdem Yörük (2022). "Extended Multilingual Protest News Detection - Shared Task 1, CASE 2021 and 2022". *Proceedings of the 5th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE)*. Abu Dhabi, United Arab Emirates (Hybrid). Association for Computational Linguistics, pp. 223–228.

**Radford, Benjamin J. (2022).** "High Resolution Conflict Forecasting with Spatial Convolutions and Long Short-Term Memory". *International Interactions*, pp. 1–20. DOI: 10.1080/03050629.2022.2031182.

Gao, Jingjing (Graduate Student Co-Author) and **Benjamin J. Radford (2021).** "Death by Political Party: The Relationship Between COVID-19 Deaths and Political Party Affiliation". *World Medical & Health Policy* 13, pp. 224–249. doi: 10.1002/wmh3.435.

Halterman, Andrew and **Benjamin J. Radford (2021).** "Few-Shot Upsampling for Protest Size Detection". *Findings of the Association for Computational Linguistics ACL-IJCNLP 2021*, pp. 3713–3720. doi: 10.18653/v1/2021.findings-acl.325.

**Radford, Benjamin J. (2021).** "Automated Dictionary Generation for Political Event Coding". *Political Science Research and Methods* 9.1, pp. 157–171. doi: 10.1017/psrm.2019.1.

**Radford, Benjamin J. (2021).** "CASE 2021 Task 2: Zero-Shot Classification of Fine-Grained Sociopolitical Events with Transformer Models". *Proceedings of the 4th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE 2021)*, pp. 203–207. doi: 10.18653/v1/2021.case-1.25.

**Radford, Benjamin J. (2021).** "Regressing Location on Text for Probabilistic Geocoding". *Proceedings of the 4th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE 2021)*, pp. 53–57. doi: 10.18653/v1/2021.case-1.8.

**Radford, Benjamin J. (2020).** "Seeing the Forest and the Trees: Detection and Cross-Document Coreference Resolution of Militarized Interstate Disputes". *Proceedings of AESPEN 2020, LREC 2020*, pp. 35–41.

**Radford, Benjamin J. (2019).** "Multitask Models for Supervised Protest Detection in Texts". *Working Notes of CLEF 2019* 2380.

Minhas, Shahryar and **Benjamin J. Radford (2017).** "Enemy at the Gates Variation in Economic Growth from Civil Conflict". *Journal of Conflict Resolution* 61.10, pp. 2105–2129.

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## Reports (Not Refereed)

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Richardson, Bartley D., Shawn E. Davis, and **Benjamin J. Radford (2018).** "Sequence Aggregation Rules for Anomaly Detection in Computer Network Traffic". Presented at the 2018 ASA Symposium on Data Science and Statistics. url: <https://arxiv.org/abs/1805.03735>.

Richardson, Bartley D., **Benjamin J. Radford**, Shawn E. Davis, Keegan Hines, and David Pekarek (2018). "Anomaly Detection in Cyber Network Data Using a Cyber Language Approach". Presented at the 2018 ASA Symposium on Data Science and Statistics. url: <https://arxiv.org/abs/1808.10742>.

**Radford, Benjamin J.,** Leonardo Apolonio, Antonio Trias, and Jim A. Simpson (2017). "Network Traffic Anomaly Detection Using Recurrent Neural Networks". Presented at the 2017 MSS National Symposium on Sensor & Data Fusion. url: <https://arxiv.org/abs/1803.10769>.

Beger, Andreas, **Benjamin J. Radford**, and Michael D. Ward (2015). "Small-scale prediction of IEDs in Afghanistan using split-population duration regression". Prepared for the Office of Naval Research.

Beger, Andreas, Joshua Cutler, Matthew Dickenson, Cassy Dorff, **Benjamin J. Radford**, and Michael D. Ward (2013). "Comparing GDELT and ICEWS Event Data". Published online. url: [https://www.researchgate.net/publication/303211430\\_Comparing\\_GDELT\\_and\\_ICEWS\\_event\\_data](https://www.researchgate.net/publication/303211430_Comparing_GDELT_and_ICEWS_event_data).

**Radford, Benjamin J. (2010).** "The Evolution of US Policy Towards Iran's Nuclear Program: Lessons for the Obama Administration". *UNC Asheville Journal of Undergraduate Research*.

**Radford, Benjamin J. (2008).** "Iran Likely to Take Accusatory Stance at CWC Review Conference". *WMD Insights* April, pp. 39–43.

**Radford, Benjamin J.** and Leonard Spector (2008). "Algeria, Emirates Plan Nonproliferation-Friendly Nuclear Programs; Egypt Keeps Fuel Cycle Options Open, Rejects Expanded IAEA Monitoring". *WMD Insights* June, pp. 2–7.

**Radford, Benjamin J.** and Leonard Spector (2008). "Summary of Recent United Nations Security Council, European Union, and United States Sanctions Against Iran". *WMD Insights* April, pp. 44–50.

## Software

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

## External Grants Obtained

<b>PI.</b> National Security Agency. \$96,334. <i>Forecasting Security Updates to Identify Vulnerable Software</i>	2022
<b>Senior/Key Participant.</b> National Science Foundation. \$1,000,000. <i>Building the Federalism Data and Advanced Statistics Hub (F-DASH)</i>	2019

## Internal Grants Obtained

<b>Co-PI.</b> UNC Charlotte School of Data Science. \$15,000. <i>The Evolution of Intellectual Elite's Immigration Attitudes</i>	2022
<b>PI.</b> UNC Charlotte Faculty Research Grant. \$8,000. <i>From Protest to Tragedy—Violence Escalation in Space and Time</i>	2022
<b>Co-PI.</b> UNC Charlotte 12-Month Planning Grant. \$25,000. <i>Peace And Conflict Innovations Laboratory to Study Computational Propaganda</i>	2020
<b>Recipient.</b> Duke University Graduate Studies Fellowship.	2011–2016
<b>Recipient.</b> Duke University Graduate School Conference Travel Fellowship.	2013, 14, 15

## External Grant Submissions

<b>Co-PI.</b> NSF AIB. \$405,720. <i>Attributing Policies to Actors through Semantic Content Evaluation</i>	2022
<b>Co-PI.</b> Russell Sage Foundation. \$50,000. <i>How social scientists learned to stop worrying and love immigration</i>	2022
<b>Co-PI.</b> DARPA. \$1,000,000. <i>CANA-Dip: Credibility-Aware Negotiation Agent for Diplomacy</i>	2021
<b>Co-PI.</b> NSF. \$1,000,000. <i>PIPP Phase I: Preventing Pre-Emergence of Zoonotic Pathogens: Detection, Evolution, Ecosystems, Social Behavior and Education</i>	2021
<b>Co-PI.</b> NSF. \$290,842. <i>The Language of Neighborhoods: A Predictive and Analytical Framework</i>	2021
<b>Co-PI.</b> DARPA. \$1,205,105. <i>eMPiRIC: Modeling Population Response to Information Campaigns</i>	2020
<b>Co-PI.</b> NSF. \$19,996,313. <i>'AI for All' Institute: Bringing Diversity in AI Workforce Readiness, Research, and Outreach</i>	2020
<b>Co-PI.</b> DoD. \$444,534. <i>TRISS: Task-Oriented Robust Intelligent Assistant for System Safety</i>	2020
<b>Co-PI.</b> William T. Grant Foundation. \$996,201. <i>Building the Federalism Data and Advanced Statistics Hub</i>	2020
<b>Co-PI.</b> NCSU Laboratory for Analytic Sciences. \$71,314. <i>Improving Translation Rigor via Reinforcement Learning and Machine Translation Quality Estimation</i>	2020
<b>Co-PI.</b> UNC System Research Opportunities Initiative RFP. Budget not required. <i>Machine Intelligence and Security Studies Lab (MISSL)</i>	2020
<b>PI.</b> DARPA Young Faculty Award. Budget not required. <i>Event Graph Inference from Text Corpora</i>	2019
<b>Co-PI.</b> DoD Basic Research Program for HBCU/MI. \$658,946. <i>Surveillance, Conflict, and Dissent: New Data, Methods, and Theory for the Information Era</i>	2019

<b>Co-PI.</b> UNC System Research Opportunities Initiative RFP. Budget not required. <i>Peace and Conflict Innovations Laboratory to Study Computational Propaganda</i>	2019
<b>Co-PI.</b> UNC Undergraduate Research Office. \$25,238. <i>Introduction to Open Science for Undergraduates: Teaching and Foundations of Transparent and Reproducible Research</i>	2019

## Internal Grant Submissions

<b>PI.</b> UNC Charlotte Faculty Research Grant. \$8,000. <i>Multi-Document Detection of Complex Social Events</i>	2020
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## Invited Talks

UNC Charlotte CyberDNA <i>Machine Learning Approaches for Cybersecurity Incident Measurement</i>	2021
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

## Patents Pending

<i>A method of using artificial intelligence to predict the treatability of water</i> With Amir Younis Alansari and James E. Amburgey	Pending
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## Working Papers

Atkinson, Mary Layton and <b>Benjamin J. Radford</b> ( <b>Manuscript in preparation</b> ). "Measuring the Ideology of Major Laws".	
Kustov, Alexander, Yaoyao Dai, <b>Benjamin J. Radford</b> , and Candace Miller ( <b>Manuscript in preparation</b> ). "How Social Scientists Learned to Stop Worrying and Love Immigration".	
<b>Radford, Benjamin J.</b> , Mya Fernandez, Hanif Sajid, Niklas Stoehr, and Aaron Schein ( <b>Manuscript in preparation</b> ). "The Russian Tank Problem".	
Dai, Yaoyao, Jingjing Gao, and <b>Benjamin J. Radford</b> ( <b>Under review</b> ). "From Fear to Hate: Sources of Anti-Asian Sentiment During COVID-19".	
Stoehr, Niklas, <b>Benjamin J. Radford</b> , Ryan Cotterell, and Aaron Schein ( <b>Under review</b> ). "The Ordered Matrix Dirichlet for Modeling Ordinal Dynamics".	

## Conference Presentations

<b>Annual Meeting of the American Political Science Association</b>	
<i>Measuring the Ideology of Major Laws</i>	2022
<i>How Social Scientists Learn to Stop Worrying and Love Immigration</i>	2022
<i>What is Word Embedding and How Can it Be Useful for Social Science Research</i>	2021
<i>Identifying Party Families with Time Series Multilingual Word Embedding</i>	2021
<i>Automated Dictionary Generation for Political Event Coding</i>	2018
<i>Going Ballistic: Nuclear Bursts in North Korea and Outbursts on Twitter</i>	2018
<i>Improving Multilingual Comparability with Transfer Learning</i>	2018
<i>Big Data for the Dark Side: Mapping the Rebel Alliance</i>	2015

<b>Annual Meeting of the Society for Political Methodology</b>	
<i>How Social Scientists Learn to Stop Worrying and Love Immigration</i>	2022
<i>Towards Better Human Annotation</i>	2022
<b>CASE Workshop at EMNLP</b>	
<i>Political Event Coding as Text-to-Text Sequence Generation</i>	2022
<i>Extended Multilingual Protest News Detection – Shared Task 1, CASE 2021 and 2022</i>	2022
<b>Annual Meeting of the International Studies Association</b>	
<i>Why Do You Dress Like Us?</i>	2022
<i>High Resolution Conflict Forecasting with Spatial Convolutions and Long Short-Term Memory</i>	2022
<i>Tactics of Insurgency and the Micro-Dynamics of IED Use</i>	2015
<b>Annual Meeting of the Southern Political Science Association</b>	
<i>From Fear to Hate: Anti-Asian Sentiment During COVID-19</i>	2022
<i>Spatial Predictors of Protest Suppression Events</i>	2020
<i>Multilingual Word Embedding for Zero-Shot Text Classification</i>	2019
<i>Primed for Defense: How I Learned to Start Worrying and Love the Bomb</i>	2013
<b>CASE Workshop at ACL-IJCNLP</b>	
<i>Regressing Location on Text for Probabilistic Geocoding</i>	2021
<i>Few-Shot Upsampling for Protest Size Detection</i>	2021
<i>CASE 2021 Task 2: Zero-Shot Classification...</i>	2021
<b>Violence Early Warning System (ViEWS) Prediction Competition.</b>	
<i>High-Resolution Conflict Forecasting...</i>	2020
<b>Conference on Language Resources and Evaluation, AESPEN Workshop</b>	
<i>Seeing the Forest and the Trees...</i>	2020
<b>Conference on New Directions in Analyzing Text as Data</b>	2018
<b>Military Sensing Symposium, National Symposium on Sensor &amp; Data Fusion</b>	2017
<b>Annual Meeting of the Midwest Political Science Association</b>	2013, 14, 15
<b>Duke-UNC International Relations Workshop</b>	2014

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## Teaching Experience

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### Courses Taught

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<b>Instructor of Record</b>	Charlotte, NC
<b>University of North Carolina at Charlotte</b>	2019–Present
<ul style="list-style-type: none"> <li>• PPOL 8101: <i>Data Management and Basic Analytics</i></li> <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>• GRAD 6103 &amp; 8103: <i>Classificatory Methods &amp; Time Series</i></li> <li>• POLS 2220: <i>Political Science Research Methods</i></li> <li>• POLS 3154: <i>Cyberspace &amp; Politics</i></li> <li>• POLS 3700: <i>Honors Research</i></li> <li>• POLS 3800: <i>Independent Study</i></li> <li>• POLS 4700: <i>Honors Thesis</i></li> </ul>	
<b>Invited Lecture</b>	Arlington, VA
<b>George Mason University</b>	Nov. 2017
<ul style="list-style-type: none"> <li>• CSI 899: <i>Computational Research and Applications</i></li> </ul>	
<b>Teaching Assistant for Professor Kyle Beardsley</b>	Durham, NC
<b>Duke University</b>	2013
<ul style="list-style-type: none"> <li>• POLSCI 130: <i>Introduction to Political Inquiry</i></li> </ul>	

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### Mentoring

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<b>Dissertation Committee Member.</b> Robert Pinka.	In Progress
<b>Dissertation Committee Member.</b> Ivan Flores-Martinez.	In Progress

<b>Dissertation Committee Member.</b> Dr. Jingjing Gao. <i>Social Media Use in Public Health and Policy Study</i>	2022
<b>Honors Thesis Advisor.</b> Mya Fernandez.	2022
<b>Honors Thesis Advisor.</b> Connor Frunzi. <i>On Autonomous Weapon Systems: Future Proliferation, The Arms Race, And Regulation</i>	2022
<b>Honors Thesis Committee Member.</b> Scott Christensen. <i>A Spatial Analysis of Social Vulnerability, the COVID-19 Pandemic, and Income Gap Loans in Mecklenburg County, North Carolina</i>	2021

## Service

### Professional Service

<b>Organizing Committee Member,</b> The 5th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE 2022).	2022
<b>Reviewer,</b> Nonprofit and Voluntary Sector Quarterly	2022
<b>Reviewer,</b> Empirical Methods in Natural Language Processing 2022: <i>Unsupervised and Weakly-Supervised Methods in NLP</i>	2022
<b>Reviewer,</b> International Interactions	2021
<b>Reviewer,</b> American Journal of Political Science	2021
<b>Reviewer,</b> American Journal of Preventive Medicine	2021
<b>Program Committee Member, Reviewer,</b> The 4th Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text (CASE 2021) the Association for Computational Linguistics.	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>Chair &amp; Discussant,</b> SPSA New Approaches in the Study of Terrorism and Civil War	2020
<b>Reviewer,</b> IEEE: Transactions on Network and Service Management	2019
<b>Reviewer,</b> Political Science Research & Methods	2018
<b>Discussant,</b> APSA Panel on Prediction	2015
<b>Reviewer,</b> International Studies Review	

### University Service

<b>Non-voting Junior Faculty Observer,</b> Dept. Review Committee (POLS)	2021–2022
<b>Department Representative,</b> Faculty Council (POLS)	2020–2021
<b>Author &amp; Grader,</b> Qualifying Exam Committee (PPOL)	2020, 21, 22
<b>Committee Member,</b> Speakers Committee (SDS)	2021
<b>Committee Member,</b> Awards Committee (POLS)	2020–2021
<b>Committee Member,</b> International Relations Search Committee (POLS)	2020–2021
<b>Committee Member,</b> Curriculum Review Committee (PPOL)	2020–2021
<b>Participant,</b> New Faculty Learning Community	2019–2020
<b>Participant,</b> New Faculty Mentoring Program	2019–2020

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## Public Service

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**Judge**, Northern Virginia Regional Science Fair 2019

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## Honors & Awards

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**Finalist**, Data Visualization Contest, Duke University 2013

**Graduated summa cum laude**, University of North Carolina at Asheville 2010

**Top Graduating Math Student**, University of North Carolina at Asheville 2010

**Distinction in International Studies**, University of North Carolina at Asheville 2010

**Finalist**, Hasbro NERF *Battle of the Ads* 2010

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## Professional Memberships

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American Political Science Association 2017, 18, 21, 22

Society for Political Methodology 2017, 18, 21, 22

Linguistic Data Consortium 2020, 21, 22

Association for Computational Linguistics 2021