

Benjamin J. Radford

Political Scientist · Data Scientist

benradford.com

Education

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

Academic Appointments

Assistant Professor <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

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

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 2022)*.
- 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.

Reports (Not Refereed)

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.

Radford, Benjamin J. (2010). "The Evoution 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

mmmtsne 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=mmmtsne>

External Grants Obtained

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

Internal Grants Obtained

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

External Grant Submissions

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

PI. 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

Conference Presentations

Annual Meeting of the American Political Science Association	
<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
Annual Meeting of the Society for Political Methodology	
<i>How Social Scientists Learn to Stop Worrying and Love Immigration</i>	2022
<i>Towards Better Human Annotation</i>	2022
Annual Meeting of the International Studies Association	
<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
Annual Meeting of the Southern Political Science Association	
<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
CASE Workshop at ACL-IJCNLP	
<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
Violence Early Warning System (ViEWS) Prediction Competition.	
<i>High-Resolution Conflict Forecasting...</i>	2020
Conference on Language Resources and Evaluation, AESPEN Workshop	
<i>Seeing the Forest and the Trees...</i>	2020
Conference on New Directions in Analyzing Text as Data	
	2018
Military Sensing Symposium, National Symposium on Sensor & Data Fusion	
	2017
Annual Meeting of the Midwest Political Science Association	2013, 14, 15
Duke-UNC International Relations Workshop	2014

Teaching Experience

Courses Taught

Instructor University of North Carolina at Charlotte	Charlotte, NC 2019–Present
<ul style="list-style-type: none"> • PPOL 8101: <i>Data Management and Basic Analytics</i> • GRAD 8009 & 6009: <i>Data Science for Social Scientific Inquiry</i> • GRAD 6101 & 8101: <i>Linear Regression</i> • GRAD 6103 & 8103: <i>Classificatory Methods & Time Series</i> • POLS 2220: <i>Political Science Research Methods</i> • POLS 3154: <i>Cyberspace & Politics</i> • POLS 3700: <i>Honors Research</i> • POLS 3800: <i>Independent Study</i> • POLS 4700: <i>Honors Thesis</i> 	
Invited Lecture George Mason University	Arlington, VA Nov. 2017
<ul style="list-style-type: none"> • CSI 899: <i>Computational Research and Applications</i> 	
Teaching Assistant for Professor Kyle Beardsley Duke University	Durham, NC 2013
<ul style="list-style-type: none"> • POLSCI 130: <i>Introduction to Political Inquiry</i> 	

Service

Professional Service

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

University Service

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

Public Service

Judge , Northern Virginia Regional Science Fair	2019
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Honors & Awards

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 <i>Battle of the Ads</i>	2010

Professional Memberships

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