

# CV/ Cody Buntain, PhD

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## RESEARCH FOCUS

**At the intersection of data science with the social sciences, to develop and adapt advanced computational techniques to solve critical political and social issues, with a focus on crisis communication, social movements, and political participation, crisis informatics, online political engagement, information/interaction quality, social media, real-time summarization, weak supervision, text mining, machine learning.**

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## ACADEMIC APPOINTMENTS

### NEW YORK UNIVERSITY

10/2018–Present **Postdoctoral Researcher, Social Media and Political Participation (SMaPP) Lab**, Advisors: Joshua Tucker, Jonathan Nagler, Richard Bonneau.

5/2018–9/2018 **Visiting Scholar, Social Media and Political Participation (SMaPP) Lab**, Hosts: Joshua Tucker and Jonathan Nagler.

### UNIVERSITY OF MARYLAND, COLLEGE PARK

6/2017–Present **Adjunct Faculty**, *College of Information*.

10/2016–9/2018 **Postdoctoral Fellow, Intelligence Community Postdoctoral Fellowship Program**, Advisor: Jennifer Golbeck.

### AMERICAN UNIVERSITY, WASHINGTON, D.C.

8/2015–12/2015 **Adjunct Faculty**, *Computer Science Department*.

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## RELEVANT EMPLOYMENT BACKGROUND

8/2011–3/2014 **Research Scientist (Part-Time)**, *Raytheon Pikerwerks*, Arlington, VA.

8/2009–8/2011 **Director of Research**, *Pikerwerks Corporation*, Madison, AL.

5/2009–8/2009 **Research Engineer**, *Pikerwerks Corporation*, Madison, AL.

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## EDUCATION

8/2011–12/2016 **PhD in Computer Science**, *University of Maryland*, College Park, MD.

Advisor: Professor Jennifer Golbeck

Committee: Professor Jimmy Lin, Professor Nicholas Diakopoulos, Professor Hector Corrada Bravo, Professor V.S. Subrahmanian

5/2007–5/2010 **MS in Computer Science**, *University of Alabama in Huntsville*, Huntsville, AL.

Advisor: Professor Daniel Rochowiak

8/2003–5/2007 **BS in Computer Science and Mathematics**, *University of Alabama in Huntsville*, Huntsville, AL.

Honors: Summa Cum Laude

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## FELLOWSHIPS AND AWARDS

Fellowship: Intelligence Postdoctoral Fellowship

Institution: ORISE

Date: October 2016

Fellowship: OSDC-PIRE Fellowship

Institution: Florida International University and the University of Amsterdam

Date: Summer 2014

## AWARDS AND HONORS

- Best Paper Award, IEEE SmartCloud 2017, November 2017
- SIGIR Student Grant, April 2016
- Best Paper Honorable Mention, #Microposts2016, April 2016
- Goldhaber Awards, March 2014 and April 2015
- International Conference Student Awards, February 2014 and April 2015
- UMD HCIL Conference Award, March 2015
- Computer Science Department Gannon Award, February 2014

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## PUBLICATIONS

### CHAPTERS IN BOOKS

- Cody Buntain, **Characterizing Gender Differences in Misogynistic and Antisocial Microblog Posts**, in *Online Harassment*, Jennifer Golbeck (ed.) London, UK: Springer, 2018.

### REFEREED JOURNAL PUBLICATIONS

- Cody Buntain and Jennifer Golbeck, Trust Transfer Between Contexts, *Journal of Trust Management*, 2(1):6, 2015.

### CONFERENCE PROCEEDINGS

- Brooke Auxier, **Cody Buntain**, Paul Jaeger, Jennifer Golbeck, Hernisa Kacorri, #HandsOffMyADA: A Twitter Response to the ADA Education and Reform Act, in Proceedings of the *ACM Conference on Human Factors in Computing Systems (CHI 2019)*, Glasgow, Scotland, May, 2019.
- Cody Buntain, Jennifer Golbeck, Brooke Auxier, Biniyam Girum Assefa, Karen Boyd, Kristen Byers, Gursimran Chawla, Daniel Chen, Benjamin Cooper, Jake Cupani, Clay Daetwyler, Nicholas DeWitt, Suzanne Garcia, Christine Hafer, Misbah Khan, Elo Lewis, Marianna Martindale, Analyzing a Fake News Authorship Network, in Proceedings of the *2019 iConference*, College Park, MD, March, 2019.
- Brooke Auxier, **Cody Buntain**, Jennifer Golbeck, Analyzing sentiment and themes in fitness influencers' Twitter dialogue, in Proceedings of the *2019 iConference*, College Park, MD, March, 2019.
- Brooke Auxier, **Cody Buntain**, Paul Jaeger, Jennifer Golbeck, Hernisa Kacorri, #HandsOffMyADA: A Twitter Response to the ADA Education and Reform Act, in Proceedings of the *ACM Conference on Human Factors in Computing Systems (CHI 2019)*, Glasgow, Scotland, May, 2019.
- Cody Buntain, Learning Information Types in Social Media for Crises: TREC-IS, in Proceedings of the *Twenty-Seventh Text REtrieval Conference (TREC 2018)*, Gaithersburg, MD, November, 2018.
- Cody Buntain, Jungkyu Rhys Lim, #pray4victims: Consistencies In Response To Disaster on Twitter, in Proceedings of the *21st ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, Jersey City, New York, USA, 2018. (**Honorable Mention Award**)
- Jennifer Golbeck, Cody Buntain, This Paper Is About Lexical Propagation on Twitter. H\*ckin smart. 12/10. Would accept!, in Proceedings of the *ACM/IEEE International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, Barcelona, Spain, 2018.
- Matthew Louis Mauriello, Brenna McNally, Cody Buntain, Sapna Bagalkotkar, Samuel Kushnir, and Jon E Froehlich, A Large-Scale Analysis of YouTube Videos Depicting Everyday Thermal Camera Use, in Proceedings of the *ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI)*, 2018.

- Jennifer Golbeck, Matthew Mauriello, Brooke Auxier, Keval H Bhanushali, Christopher Bonk, Mohamed Amine Bouzaghrane, **Cody Buntain**, Riya Chanduka, Paul Cheakalos, Jeannine B. Everett, Waleed Falak, Carl Gieringer, Jack Graney, Kelly M. Ho man, Lindsay Huth, Mayanka Jha, Misbah Khan, Varsha Kori, Elo Lewis, George Mirano, William T. Mohn IV, Sean Mussenden, Tammie M. Nelson, Sean Mcwillie, Akshat Pant, Priya Shetye, Rusha Shrestha, Alexandra Steinheimer, Aditya Subramanian, Gina Visnansky, Fake News vs. Satire: A Dataset and Analysis, in *Proceedings of the 10th International ACM Web Science Conference (WebSci'18)*, 2018.
- Cody Buntain, Erin McGrath, and Brandon Behlendorf, Improving Social Science-Oriented Search with Microblog Data Resellers and Network Analysis, in *Proceedings of the 51st Annual Hawaii International Conference on System Sciences (HICSS)*, 2018.
- Cody Buntain, and Jennifer Golbeck, Automatically Identifying Fake News in Popular Twitter Threads, In *Proceedings of the 1st IEEE SmartCloud Conference*, 2017. (**Best Paper Award**)
- Erin C. McGrath, Eric Dunford, **Cody Buntain**, Karsten Donnay, David Backer, David E. Cunningham, Explaining electoral violence in Sub-Saharan Africa using grievance measures derived from social media, *the American Political Science Association Annual Convention*, 2017.
- Jennifer Golbeck, Zahra Ashktorab, Rashad O Banjo, Alexandra Berlinger, Siddharth Bhagwan, **Cody Buntain**, Paul Cheakalos, Alicia A Geller, Quint Gergory, Rajesh Kumar Gnanasekaran, Raja Rajan Gunasekaran, Kelly M Hoffman, Jenny Hottle, Vichita Jienjiltert, Shivika Khare, Ryan Lau, Marianna J Martindale, Shalmali Naik, Heather L Nixon, Piyush Ramachandran, Kristine M Rogers, Lisa Rogers, Meghna Sardana Sarin, Gaurav Shahane, Jayanee Thanki, Priyanka Vengataraman, Zijian Wan, Derek Michael Wu, A Large Labeled Corpus for Online Harassment Research, in *Proceedings of the 9th International ACM Web Science Conference (WebSci'17)*, 2017.
- Cody Buntain, and Jimmy Lin, Burst Detection in Social Media Streams for Tracking Interest Profiles in Real Time, in *Proceedings of the 39th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2016)*, pages 777-780, July 2016, Pisa, Italy.
- Cody Buntain, Jennifer Golbeck, Brooke Liu, and Gary LaFree, Evaluating Public Response to the Boston Marathon Bombing and Other Acts of Terrorism through Twitter, in *Proceedings of the International AAAI Conference on Web and Social Media*, 2016.
- Cody Buntain, Jimmy Lin, and Jennifer Golbeck, Learning to Discover Key Moments in Social Media Streams, in *Proceedings of the IEEE Consumer Communications and Networking Conference*, 2016.
- Cody Buntain, Sarit Kraus, and Amos Azaria, Leveraging Fee-Based, Imperfect Advisors in Human-Agent Games of Trust, in *Proceedings of the Twenty-Eighth Conference on Artificial Intelligence*, 2014.
- Cody Buntain, Jennifer Golbeck, Dana Nau, and Sarit Kraus, Advice and trust in games of choice, in *Tenth Annual International Conference on Privacy, Security and Trust (PST)*, 2012, pp. 157–158.
- John Rushing, Todd Berendes, Hong Lin, **Cody Buntain**, and Sara Graves, Spyglass: A system for ontology based document retrieval and visualization, *22nd International FLAIRS Conference*, 2009.
- Cody Buntain, 3D ontology visualization in semantic search, in *Proceedings of the 46th Annual Southeast Regional Conference of the ACM*, 2008, pp. 204–208.

## REFEREED WORKSHOPS

- Cody Buntain, “Studying National Trends in Drug Use with Social Media,” in the Workshop on Social Media and Demographics Research at ICWSM, 2018.
- Cody Buntain, Erin McGrath, and Jennifer Golbeck, “Tracking Emigration from Conflict Areas using Social Media,” in the Workshop on Social Media and Demographics Research at ICWSM, 2016.
- Cody Buntain, Erin McGrath, Jennifer Golbeck, and Gary LaFree, “Comparing Social Media and Traditional Surveys Around the Boston Marathon Bombing,” in 6th Workshop on Making Sense of Microposts (#Microposts2016), 2016. (**Best Paper Honorable Mention**)

- Cody Buntain, and Jimmy Lin, “Burst Detection in Social Media Streams for Tracking Interest Profiles in Real Time,” in Proceedings of the Twenty-Fourth Text REtrieval Conference (TREC 2015), November 2015, Gaithersburg, Maryland.
- Cody Buntain, Jennifer Golbeck, and Gary LaFree, “Powers and Problems of Integrating Social Media Data with Public Health and Safety,” in the *Proceedings of the Bloomberg Data for Good Exchange*, 2015.
- Cody Buntain, “Discovering Credible Events in Near Real Time from Social Media Streams,” in PhD Symposium, 24th International World Wide Web Conference, WWW ’15, 2015.
- Cody Buntain and Jennifer Golbeck, “This is your Twitter on drugs. Any questions?,” in Workshop on Modeling social media: mining big data in social media and the web (MSM 2015), in 24th International World Wide Web Conference, WWW ’15, 2015.
- Cody Buntain, Language-Agnostic Event Detection Across Sports from Twitter and Using Temporal Features, in *Workshop on Large Scale Sports Analytics, KDD*, 2014.
- Cody Buntain and Jennifer Golbeck, Trust Transfer Between Contexts, in *Proceedings of the Workshop on Incentives and Trust in E-Communities, AAAI*, 2014.
- Cody Buntain and Jennifer Golbeck, Social Roles in Multi-Community Websites, in *Proceedings of the 5th International Workshop on Modeling Social Media*, 2014.
- Cody Buntain, Christopher Natoli, and Miroslav Živković, Comparing algorithms for detecting abrupt change points in data, in *Proceedings of the 2014 Conference on Super Computing*, November 2014.
- Nadya Belov, Jason Schlachter, **Cody Buntain**, and Jennifer Golbeck, Computational trust assessment of open media data, *2013 IEEE International Conference on Multimedia and Expo Workshops (ICMEW)*, 2013.
- Cody Buntain, Jennifer Golbeck, Dana Nau, and Sarit Kraus, Advice and trust in games of choice, in *University of Maryland AI Day*, April 2012.

## THESIS AND DISSERTATION

- Cody Buntain, **Discovering Credible Events In Near Real Time From Social Media Streams**, Ph.D. Thesis, University of Maryland, College Park, 2016.
- Cody Buntain, **A Game-Theoretic Comparison Of Genetic And Model-Based Agents In Learning Strategic Interactions**, Master’s Thesis, University of Alabama in Huntsville, 2010.

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## SPONSORED RESEARCH

Role and Program: **PI**, “Automated Program Analysis in Cybersecurity”

Employer: Raytheon Pikewerks

Sponsor: Defense Advanced Research Projects Agency (DARPA)

Duration: March 2012 – August 2013

Role and Program: **PI**, “Deception Studio: Attacker Characterization and Dynamic Relocation” Phase II

Employer: Pikewerks Corporation

Sponsor: Air Force Research Labs (AFRL)

Duration: March 2011 – April 2013

Role and Program: **PI**, “Imbuing Trust in Untrusted Hardware to Improve Protections” Phase I

Employer: Pikewerks Corporation

Sponsor: Air Force Research Labs (AFRL)

Duration: November 2010 – May 2011

Role and Program: **PI**, “Deception Studio: Attacker Characterization and Dynamic Relocation” Phase I

Employer: Pikewerks Corporation

Sponsor: Air Force Research Labs (AFRL)  
Duration: November 2009 – May 2010

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## ACADEMIC SERVICE

- **WWW**: Program Committee Member for the World Wide Web Conference, 2018-2019
- **ICWSM**: Program Committee Member for the International AAAI Conference on Web and Social Media, 2016-2019
- **JMLR**: Journal of Machine Learning Research External Reviewer, 2017
- **Journal of Social Media+Society**: External Reviewer, 2017-2018
- **CHI**: ACM Conference on Human Factors in Computing, 2014, 2016, 2018-2019
- **HICSS**: Annual Hawaii International Conference on System Sciences, 2014, 2018
- **Transactions of Knowledge and Data Engineering**: External Reviewer, 2017
- **SIGIR**: Special Interest Group on Information Retrieval, 2017
- **Transactions on Internet Technology**: External Reviewer, 2017
- **Transactions on Internet Systems**: External Reviewer, 2017

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## TEACHING, EXTENSION, MENTORING, AND ADVISING COURSES TAUGHT (AS INSTRUCTOR/CO-INSTRUCTOR)

- **ENPM809G**: Network Data Science  
University of Maryland, Spring 2018
- **INST728E**: Social Media and Crisis Informatics  
University of Maryland, Winter 2018
- **INST346**: Technologies Infrastructure and Architecture  
University of Maryland, Fall 2017
- **INST326**: Object-Oriented Programming for Information Science  
University of Maryland, Summer 2017
- **CSC546**: Introduction to Computer Networks  
American University, Fall 2015

## COURSE OR CURRICULUM DEVELOPMENT

- Co-developed a new course on network science for engineering students, including homework and final project development, *ENPM809G: Network Data Science*, University of Maryland, Spring 2018.
- Converted a workshop on social media and crisis informatics into a short course on social media data collection and analysis, *INST728E: Social Media and Crisis Informatics*, University of Maryland, Winter 2018.
- Developed new course curriculum, projects, and homework for a course on the Internet and information technologies to be taught to undergraduate School of Information students, *INST346: Technologies Infrastructure and Architecture*, University of Maryland, Fall 2017.
- Designed course curriculum, projects, and homework for the second-level course on object-oriented programming to be taught to undergraduate School of Information students, *INST326: Object-Oriented Programming for Information Science*, University of Maryland, Summer 2017.
- Designed curricula for a new computer networks course to be taught to undergraduate computer science students, *CSC546: Introduction to Computer Networks*, American University, Fall 2015.

## MENTORING ROLES

- Intern Co-Coordinator for NSF INSPIRE, START Center, UMD  
Fall 2016 – Spring 2018
- Cyber Security Intern Mentor, Pikewerks Corporation

Spring 2013 – Fall 2013

- Alumnus Chapter Advisor to the Huntsville Chapter of Delta Chi  
Fall 2009 – Fall 2011

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## SPEAKING ENGAGEMENTS AND INVITED TALKS

- Greening Governance: Mapping Restoration to Strengthen Community Governance on the Ground and in the Cloud  
World Resource Institute  
Washington, D.C. (12 December 2018)
- Methods for Large-Scale Data Collection from Social Media  
Stony Brook University  
Stony Brook, NY. (13 November 2018)
- Civil Unrest Social Media Surveillance, Panelist for Sensors, Internet of Things (IoT), Telematics and Cybersecurity  
InsurTech Science and Engineering Innovation Expo  
New York, NY. (9 August 2018)
- Gaining Insight into Real-World Societal Response Using Social Media  
Intelligence Community Academic Research Symposium  
Washington, D.C. (28 September 2017)
- Leveraging Large Online Spaces to Study Communities and Response to Crises  
University of Washington  
Seattle, WA (23 August 2017)
- Leveraging Multiple Social Media Platforms for Evaluating Story Credibility  
1st North American Social Networks Conference, of the International Network for Social Network Analysis, NASN2017  
Washington, D.C. (27 July 2017)
- Tutorial on Social Media Analytics During Crises  
1st North American Social Networks Conference, of the International Network for Social Network Analysis, NASN2017  
Washington, D.C. (26 July 2017)
- Tutorial on Social Media Analytics During Crises  
HCIL Symposium, University of Maryland, College Park  
College Park, MD (May 2017, May 2016)
- “Researching Ferguson: Advanced Analytical Techniques”  
University of Maryland, College Park  
College Park, MD (9 April 2015)
- “Data’s Metamorphosis: Algorithms for Detecting Change Points in Data”  
University of Amsterdam  
Amsterdam, NL (24 July 2014)
- “Applications of and Issues in Machine Learning in Social Networks”  
University of Alabama in Huntsville  
Huntsville, AL (29 May 2013)
- “On Shaky Ground – Low-Level Threats in the Supply Chain”  
North Alabama Cyber Security Summit  
Huntsville, AL (June 2012)
- “Supply Chain Risk Management for Fun and Profit”  
InfraGard Huntsville Chapter

Huntsville, AL (March 2011)

- “Environmental key generation and hardware-binding”

The Anti-Tamper Short Course

Huntsville, AL (10 June 2010)

- “Learn, protect, adapt: Expanding protections outside the box”

Software Protection, Information Assurance, and Anti-Tamper SBIR Workshop

Dayton, OH (July 2010)