

## **GIZEM KORKMAZ, PHD (CV, FEBRUARY 2019)**

Research Associate Professor  
Biocomplexity Institute & Initiative, University of Virginia  
Social and Decision Analytics Division  
1100 Wilson Blvd Suite 2910, Arlington VA 22209  
Phone: +1 540-200-9664  
Email: [gkorkmaz@virginia.edu](mailto:gkorkmaz@virginia.edu)

### **POSITIONS & EMPLOYMENT**

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- Research Associate Professor, Social and Decision Analytics Division, Biocomplexity Institute & Initiative, University of Virginia Oct. 2018 – current
- Adjunct Faculty, Department of Agriculture and Applied Economics, Virginia Tech Mar. 2018 – current
- Research Assistant Professor, Social and Decision Analytics Laboratory, Biocomplexity Institute of Virginia Tech Aug. 2014 – Oct. 2018
- Postdoctoral Associate, Social and Decision Analytics Laboratory, Biocomplexity Institute of Virginia Tech Feb. 2014 – Aug. 2014
- Postdoctoral Associate, Biocomplexity Institute of Virginia Tech Network Dynamics and Simulation Science Laboratory (NDSSL) Jan. 2013 – Feb. 2014
- Research Associate, NDSSL, Biocomplexity Institute of Virginia Tech Oct. 2012 – Jan. 2013
- Visiting Scholar, NDSSL, Biocomplexity Institute of Virginia Tech Oct. 2011 – Apr. 2012
- Graduate Research Assistant, Department of Social and Political Science, European University Institute (EUI) Sep. 2008 – Jun. 2009
- Graduate Teaching Assistant, Department of Economics, EUI Sep. 2008 – May 2009
- Graduate Research and Teaching Assistant, Department of Economics, Boğaziçi University (Boun) Sep. 2005 – Aug. 2007
- Undergraduate Teaching Assistant, Department of Economics, Boun Sep. 2003 – May 2005

### **PROFESSIONAL PREPARATION**

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- Ph.D., Economics, European University Institute (EUI), Florence - Italy Dec. 2012  
Thesis: "Network Structure Matters: Applications to R&D Collaboration, Collusion, and Online Communication Networks"  
Advisor: Prof. Fernando Vega-Redondo
- M.A., Economics, Boğaziçi University, Istanbul - Turkey Mar. 2009  
Thesis: "Explorations on the Accountability of Independent Regulatory Agencies"  
Advisors: Prof. E. Unal Zenginobuz and Prof. Fikret Adaman
- M.Sc., Economics, European University Institute (EUI), Florence - Italy Jun. 2008
- B.A. with Honors, Economics, Boğaziçi University, Istanbul - Turkey Jun. 2005

### **RESEARCH AND TEACHING INTERESTS**

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Social and Economic Networks, Game Theory, Behavioral Economics, Social and Decision Analytics, Industrial Organization, Applied Microeconomic Theory, R&D Economics, Innovation, Collective Action, Social Contagion, Social Media Analytics, Political Economy, Policy Analytics

### **PEER-REVIEWED PUBLICATIONS**

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- Keller, S.A.; **G. Korkmaz**; C. Robbins; and S. Shipp. 2018. "Opportunities to Observe and Measure Intangible Inputs to Innovation: Definitions, operationalization, and examples." *Proceedings of the National Academy of Sciences (PNAS)*. 115 (50), 12638-12645.

- Korkmaz, G.;** M. Capra; A. Kraig; C. J. Kuhlman; K. Lakkaraju; and F. Vega-Redondo. 2018. "Coordination and Collective Action on Communication Networks." *Proceedings of the 17th ACM International Conference on Autonomous Agents and Multi-agent Systems (AAMAS)*, Stockholm, Sweden, July 10–15, 2018, pp. 1062-1070. International Foundation for Autonomous Agents and Multiagent Systems.
- Korkmaz, G.;** C. J. Kuhlman; J. Goldstein; and F. Vega-Redondo. 2018. "A Model of Homophily, Common Knowledge and Collective Action Through Facebook." *Proceedings of the 2018 IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM)* pp. 409-412. IEEE.
- Korkmaz, G.;** C. Kelling; C. Robbins; and S. Keller. 2018. "Modeling the Impact of R Packages Using Dependency and Contributor Networks." *Proceedings of the 2018 IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM)* pp. 511-514. IEEE.
- Crandell, I. and **Korkmaz, G.** 2018. "Link Prediction in the Criminal Network of Albuquerque." *Proceedings of the 2018 IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM)* pp. 564-567. IEEE.
- Pires, B.; **G. Korkmaz;** K. Ensor; D. Higdon; S. Keller; B. Lewis; and A. Schroeder. 2018. "Estimating Individualized Exposure Impacts from Ambient Ozone Levels: A Synthetic Information Approach" *Environmental Modeling and Software*. 103:146-157.
- Keller, S.A.; S. Shipp; **G. Korkmaz;** E. Molfino; J. Goldstein; V. Lancaster; B. Pires; D. Higdon; D. Chen; and A. Schroeder. 2018. "Harnessing the Power of Data to Support Community-Based Research." *WIREs Computational Statistics*. e1426.
- Korkmaz, G.;** C. J. Kuhlman; S. S. Ravi; F. Vega-Redondo. 2018. "Spreading of Social Contagions without Key Players." *World Wide Web: Internet and Web Information Systems*. 21:1187-1221.
- Ziemer, K. and **G. Korkmaz.** 2017. "Using Text to Predict Psychological and Physical Health: A Comparison of Human Raters and Computerized Text Analysis." *Computers in Human Behavior*. 76: 122-127.
- Keller, S.; **G. Korkmaz;** M. Orr; A. Schroeder; and S. Shipp. 2017. "The Evolution of Data Quality: Understanding the Transdisciplinary Origins of Data Quality Concepts and Approaches." *Annual Review of Applied Statistics* 2017. 4:5.1-5.24.
- Molfino, E.; **G. Korkmaz;** A. Schroeder; S. Keller; S. Shipp; Weinberg, D. H. 2016. "Can Administrative Housing Data Replace Survey Data?" *Cityscape: A Journal of Policy Development and Research*. 9:1. pp. 265-292.
- Pires, B.; J. Goldstein; D. Higdon; S. Reese; P. Sabin; **G. Korkmaz** et al. 2017. "A Bayesian Simulation Approach for Supply Chain Synchronization." In *Proceedings of Winter Simulation Conference (WSC)*
- Korkmaz, G.;** C. J. Kuhlman; and F. Vega-Redondo. 2016. "Can Social Contagion Spread Without Key Players?" In *Proceedings of the 2016 IEEE International Conference on Behavioral, Economic and Socio-cultural Computing (BESOC' 16)*, Durham, NC, USA, 2016, pp. 1-6.
- Korkmaz, G.;** J. Cadena; C. J. Kuhlman; A. Marathe; A.Vullikanti; and N. Ramakrishnan. (2016). "Multi-Source Models for Civil-Unrest Forecasting." *Social Network Analysis and Mining*. 6:50.
- Korkmaz, G.;** C. J. Kuhlman; S. S. Ravi; and F. Vega-Redondo. (2016). "Approximate Contagion Model of Common Knowledge on Facebook." In *Proceedings of the 27th ACM Conference on Hypertext and Social Media (HT' 16)*. ACM, New York, NY, USA, 231-236.
- Ziemer, K. and **G. Korkmaz.** (2016). "Human vs. Automated Text Analysis: Estimating Positive and Negative Mood." In *Proceedings of the 27th ACM Conference on Hypertext and Social Media (HT' 16)*. ACM, New York, NY, USA, 309-314.
- Korkmaz, G.;** J. Cadena; C. Kuhlman; A. Marathe; A.Vullikanti; N. Ramakrishnan. (2015). "Combining Heterogeneous Online Data for Civil-Unrest Forecasting." In *Proceedings of the 2015 IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM)*.

- Cadena, J.; **G. Korkmaz**; C. Kuhlman; A. Marathe; N. Ramakrishnan; and A. Vullikanti. (2015). "Forecasting Social Unrest Using Activity Cascades." *PLoS ONE* 10(6): e0128879.
- Pires, B., **G. Korkmaz**, K. Ensor et al. (2015). "Towards an *in silico* Experimental Platform for Air Quality: Houston, TX as a Case Study." Computational Social Science Society of the Americas Conference. Santa Fe. New Mexico; 2015.
- Abdelhamid, S.; C. J. Kuhlman; **G. Korkmaz**; M. Marathe; SS. Ravi. (2015). "EDISON: A Web Application for Computational Health Informatics at Scale." In *Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics*, pp. 413-422.
- Korkmaz, G.**; C. J. Kuhlman; A. Marathe; M. V. Marathe; and F. Vega-Redondo. (2014). "Collective Action through Common Knowledge Using a Facebook Model." In *Proceedings of the 2014 ACM International Conference on Autonomous Agents and Multi-agent Systems*, pp. 253-260.
- Ramakrishnan, N.; P. Butler; S. Muthiah; N. Self; R. Khandpur; P. Saraf; W. Wang; J. Cadena; A. Vullikanti; **G. Korkmaz**, et al. (2014). "'Beating the News' with EMBERS: Forecasting Civil Unrest using Open Source Indicators." In *Proceedings of the 20th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, New York, 2014*.
- Keneshloo, Y.; J. Cadena; **G. Korkmaz**; and N. Ramakrishnan. (2014). "Detecting and Forecasting Domestic Political Crises: A Graph-based Approach." In *Proceedings of the 2014 ACM Conference on Web Science, Bloomington, 2014*.

## HONORS & AWARDS

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- Financial Support to the National Science Foundation Fourth Annual Conference on Network Science and Economics, Department of Economics, Vanderbilt University, Nashville, Apr. 2018.
- Full Scholarship Award by the National Economists Club (NEC) for the National Association for Business Economics (NABE) Economic Policy Conference, Washington D.C., Mar. 2017
- Outstanding New Faculty Award, Virginia Tech National Capital Region Faculty Association, Dec. 2016.
- Contributing Faculty, "Early Model Based Event Recognition using Surrogates (EMBERS) Software" won Inventors of the Month, The Office of the Vice President for Research and Innovation, Virginia Tech, Nov. 2016.
- PhD Grant to the XXXVI Symposium of Spanish Economic Association, Malaga, Spain, Dec. 2011
- PhD Bursary to the 7th UK Social Network Conference, London, UK, Jul. 2011
- Scholarship for Summer School in Economics 2011, Uni. Carlos III de Madrid, Spain, May 2011
- Contributing Researcher and Country Team Leader for Turkey, "EU Profiler: The First Europe-wide Voting Advice Application for 2009 European Parliamentary Elections" won World e-Democracy Forum Award, European University Institute, Oct. 2009.
- Graduate Scholarship by Italian Ministry of Foreign Affairs (2007 – 2011)
- Graduate Scholarship of Scientific and Technological Research Council of Turkey (2006 – 2007)
- Scholarship of Istanbul Metropolitan Municipality, Turkey (2003 – 2005)
- Turkish Ministry Success Grant (2000 – 2005)

## RESEARCH SUPPORT

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"The Dynamics of Common Knowledge on Social Networks: An Experimental Approach."

**Role: PI**

Date: Oct 2017 – Sep. 2020

Funder: Air Force Office of Scientific Research, US Department of Defense (DoD)

Program: Minerva Research Initiative

"Measuring the Impact of Alcohol-Related Crime Reduction Strategies for Restaurants and Nightlife in Arlington." PI: Zhang, W.  
**Role: Co-PI**  
Date: Mar. 2018 – Dec. 2018  
Funder: Virginia Tech Center for Peace Studies and Violence Prevention (CPSVP)

"Homo SocioNeticus: Scaling the Cognitive Foundations of Online Social Behavior." PI: Orr, M.  
**Role: Co-PI**  
Date: Oct 2017 – Sep. 2021  
Funder: Defense Advanced Research Projects Agency (DARPA)  
Program: SocialSim: Computational Simulation of Online Social  
*"The Social Component of the Human Dimension: Leveraging Existing Department of Defense (DoD) Data Towards Optimized Individual and Team Performance."* PI: Keller, S.  
**Role: Co-PI**  
Date: Sep 2017 – Sep. 2022  
Funder: Army Research Institute (ARI) for the Behavioral and Social Sciences

"Montage: Capturing Collective Behavior with Modeling and Experimentation." PI: Ramakrishnan, N.  
**Role: Co-PI**  
Date: Oct. 2016 – Sep. 2018  
Funder: Defense Advanced Research Projects Agency (DARPA) (Department of the Interior (DOI))  
Program: Next Generation Social Science (NGS2)

"Towards an Integrated Data Framework for Understanding the Context of Military Environments." PI: Keller, S.  
**Role: Co-PI**  
Date: Jun. 2015 – Jun. 2018  
Funder: Army Research Institute (ARI) for the Behavioral and Social Sciences

"National Science Foundation (NSF) Use of Statistical and Survey Methodology Research to Improve or Redesign Surveys." PI: Keller, S.  
**Role: Co-PI**  
Date: Apr. 2016 – Apr. 2021  
Funder: US Department of Agriculture (USDA)

"Feasibility and Efficacy of Matching Public Records with Sample Surveys." PI: Keller, S.  
**Role: Co-PI**  
Date: Dec. 2015 – May 2017  
Funder: US Census Bureau, and Housing and Urban Development (HUD).

"Bringing Evidence-Based Decision Making to Local Communities through Community Learning." PI: Keller, S.  
**Role: Co-PI**  
Date: Aug. 2016 – Nov. 2016  
Funder: Laura & John Arnold Foundation

"Diverse Undergraduate Research Experiences in Statistics." PI: Keller, S.  
Date: May – Aug. 2016  
Funder: American Statistical Association (National Science Foundation (NSF))

"Initiative Launch Inventory Analytics for Beauty Care." PI: Higdon, D.  
**Role: Co-PI**  
Date: Apr. 2015 – Mar. 2016  
Funder: Procter & Gamble

"P&G Sankey Visualization for United Kingdom & North America (NA) Shipments." PI: Korkmaz, G.  
**Role: PI**

Date: Aug. 2014 – Dec. 2014

Funder: Procter & Gamble

“A Pilot Study to Establish Data Use and Quality Standards for Using New Sources of Structured and Unstructured Data.” PI: Keller, S.

**Role: Key personnel**

Date: May 2015 – Jan. 2016

Funder: MITRE (US Census Bureau)

“End-to-End Digitization and Supply Chain Modeling Framework.” PI: Shipp, S.

**Role: Key personnel**

Date: Jul. 2014 – Feb. 2016

Funder: Procter & Gamble

“Early Model-Based Event Recognition Using Surrogates.” PI: Ramakrishnan, N.

**Role: Postdoc**

Date: Apr. 2012 – Feb. 2014

Funder: Intelligence Advanced Research Projects Activity (IARPA)

Program: Open Source Indicators (OSI)

“NetSE: Large: Collaborative Research: Contagion in Large Socio-Communication Networks.” PI: Marathe, M.

**Role: Postdoc**

Date: Jul. 2012 – Feb. 2014

Funder: National Science Foundation (NSF)

“EU Profiler: The First Europe-wide Voting Advice Application for 2009 European Parliamentary Elections.” PI: Trechsel, Alexander H. Department of Political and Social Sciences, European University Institute.

**Role: Graduate Research Assistant** & Country Team Leader for Turkey

Date: Sep. 2008 – Jun. 2009

Funder: European Union Democracy Observatory (EUDO), consortium with Kieskompas and the NCCR Democracy (University of Zurich/ Zentrum für Demokratie Aarau)/Politools network.

## **INTELLECTUAL PROPERTY**

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Volume-Based Model for Protest Forecasting. Disclosure Date: 10/26/2016. IP Disclosure: VTIP 17-041. Inventors: **G. Korkmaz**; J. Cadena; A. Kumar Vullikanti; A. Marathe; N. Ramakrishnan; VTIP Manager: Mike Miller, Virginia Tech.

Social Media Activity and Recruitment Based Model for Protest Forecasting. Disclosure Date: 10/26/2016. IP Disclosure: VTIP 17-042. Inventors: J. Cadena; **G. Korkmaz**; A. Kumar Vullikanti; A. Marathe; N. Ramakrishnan; VTIP Manager: Mike Miller.

Civil Unrest Vocabulary. Disclosure Date: 10/26/2016. IP Disclosure: VTIP 17-043. Inventors: D. Mares; **G. Korkmaz**; N. Ramakrishnan; S. Muthiah; VTIP Manager: Mike Miller, Virginia Tech.

## **CONFERENCE PRESENTATIONS & INVITED TALKS**

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Illuminating the Scope and Impact of Open Source Software: A Framework for Measurement with an Application Based on the Use of R Packages:

- National Bureau of Economic Research Conference on Research in Income and Wealth (CRIW) Conference: Big Data for 21st Century Economic Statistics, Bethesda, MD, *upcoming* Mar. 15-16, 2019 (*with C. Robbins (NSF)*)
- International Association for Research in Income and Wealth (IARIW) 35th General Conference: Innovation and the Digital Economy, Copenhagen, Denmark, Aug. 20-25, 2018 (*with C. Robbins (NSF)*).

- National Bureau of Economic Research Conference on Research in Income and Wealth (CRIW) Pre-Conference: Big Data for 21st Century Economic Statistics, Cambridge, MA, July 18, 2018 (*with C. Robbins (NSF)*).

Open Source Software as Intangible Capital: Measuring the Cost and Impact of Free Digital Tools

- International Monetary Fund (IMF) Statistical Forum on *Measuring Economic Welfare in the Digital Age: What and How?* Washington D.C., Nov 2018 (*with C. Robbins (NSF)*).

The Effect of Homophily on Common Knowledge and Coordination on Facebook:

- IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM), Barcelona, Spain, Aug. 2018.

Modeling the Impact of R Packages Using Dependency and Contributor Networks:

- IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM), Barcelona, Spain, Aug. 2018.

Link Prediction in the Criminal Network of Albuquerque:

- IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM), Barcelona, Spain, Aug. 2018.

Coordination and Collective Action on Communication Networks:

- 17th ACM International Conference on Autonomous Agents and Multi-agent Systems (AAMAS), Stockholm, Sweden, Jul. 10 – 15, 2018.

Creativity in Data Science and Workforce Development in Arlington:

- Invited Speaker at the Seminar Series 'Return on Creativity: An Arlington Asset,' by Arlington Economic Development, the Creative Economy Initiative and Arlington Cultural Affairs, Arlington, VA, Apr. 26, 2018.

Coordination and Common Knowledge in Online Social Network Experiments:

- Fourth Annual Conference on Network Science and Economics, Department of Economics, Vanderbilt University, Nashville, TN, Apr. 13-15, 2018.

Applications of Emergency Management Analytics in Arlington County:

- Invited Seminar at the Department of Agriculture and Applied Economics, Virginia Tech, Blacksburg, VA, Feb. 21, 2018.

The Dynamics of Common Knowledge on Social Networks: An Experimental Approach:

- Invited Poster at the 2018 Biocomplexity Research Showcase, Blacksburg, VA, Jan. 31, 2018.

Measuring the Scope and Impact of Open Source Software:

- Briefing at the National Science Foundation, Arlington, VA, May 31, 2017 (*with C. Robbins, NSF*).
- Poster presented at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 8, 2017; at the Data Science for the Public Good Symposium, Arlington VA, Jul, 2017 (*with C. Robbins (NSF), C. Kelling (PSU), S. Phadke (PSU), S. Shipp (VT)*).

Modeling the Impact of Open Source Software: A Study of R Packages:

- Poster presented at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 8, 2017; at the Data Science for the Public Good Symposium, Arlington VA, Jul, 2017 (*with C. Robbins (NSF), C. Kelling (PSU), S. Shipp (VT)*).

The Use of Multiple Data Sources to Predict Residential Smoke Detector Need:

- Scholarship recipient and poster presenter at the 33rd National Association of Business Economists (NABE) Economic Policy Conference, Washington D.C., March 5-7, 2017.

Building Resilient Communities: Harnessing the Power of Data:

- Federal Reserve Board, Division of Consumer and Community Affairs Research Seminar, Washington D.C., February 23, 2017 (*with Sallie Keller and Stephanie Shipp*).

The Dynamics of Coordination, Common Knowledge and Collective Action on Social Networks:

- Virginia Tech National Capital Region Faculty Association Outstanding New Faculty Lecture, Arlington, VA, Dec. 2016.

#### Collective Action and Common Knowledge: A Facebook Model:

- Invited Seminar at the Department of Economics, Virginia Tech, Blacksburg, VA, Feb. 2016.
- 13th International Conference in Autonomous Agents and Multiagent Systems (AAMAS), Paris, France, May 2014.
- III Workshop on "The Economics of Coordination and Communication." Ravello, Italy, Jun. 2012.
- Virginia Bioinformatics Institute Research Symposium, Virginia Tech, Blacksburg, Mar. 2012.
- Sunbelt XXXII: Social Network Analysis Conference, Redondo Beach, California, Mar. 2012.

#### Coordination and Collective Action in Online Social Network Experiments:

- The 2016 Annual Meeting of the American Economic Association, San Francisco, Jan. 2016.

#### Sharing Economy and Financial Inclusion:

- Invited Speaker at Virginia Tech Roundtable on Financial Inclusion and Digital Platforms, Arlington, VA, Mar. 2016.

#### Leveraging External Data Sources to Enhance Official Statistics and Products:

- Briefing at the U.S. Census Bureau, Washington, D.C., Dec. 2015 (*with Sallie Keller, Stephanie Shipp and Daniel H. Weinberg*).

#### The All Data Revolution as a New Resource to Improve 911 Response:

- International Symposium on Next Generation Infrastructure, Washington D.C., Sep. 2015 (*with Emily Molfino*).
- Virginia Bioinformatics Institute Research Symposium, Virginia Tech, Blacksburg, Apr. 2015.

#### Towards an *in silico* Experimental Platform for Air Quality: Houston, TX as a Case Study:

- International Symposium on Next Generation Infrastructure, Washington D.C., Sep. 2015 (*with Bianica Pires*).

#### Combining Heterogeneous Online Data for Civil-Unrest Forecasting:

- IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (ASONAM), Paris, France, Aug. 2015.
- Invited Speaker at the Workshop on Big Data for Social Policy, Fields Institute, Toronto, Canada, Apr. 2015.

#### Challenges of Twitter-based Predictions of Civil Unrest in Latin America:

- Invited Speaker at the NSF-CDI (Cyber-Enabled Discovery and Innovation) Project - Specialist Meeting - Human Dynamics in the Mobile Age: New Frontiers of Knowledge Discovery in Cyberspace and Big Data, San Diego, California, Aug. 2014.
- Virginia Bioinformatics Institute Research Symposium, Virginia Tech, Blacksburg, Mar. 2013.

#### R&D Collaboration in Collusive Networks:

- 28th Annual Congress of the European Economic Association, Gothenburg, Aug. 2013.
- Games 2012 - The 4th World Congress of the Game Theory Society, Istanbul, Jul. 2012.
- Invited Speaker at "Networks and Institutions," Bilkent Economics Annual Summer Workshop, Ankara, Turkey, Jul. 2012.
- Sunbelt XXXII: Social Network Analysis Conference, California, Mar. 2012.
- XXXVI Symposium of Spanish Economic Association, Malaga, Dec. 2011.
- Governance, Market Structure, Networks and Innovation Conference, Univ. of Greenwich, London, Sep. 2011.
- 6<sup>th</sup> CLEEN (Competition Law and Economics European Network) Workshop, EUI, May 2012.
- UECE Lisbon Meetings: Game Theory and Applications, Lisbon, Portugal, Nov 2010.
- Invited Seminar at the Department of Economics, Public University of Navarra, Pamplona, Spain, Nov. 2010.
- Annual Meeting of the Association of Southern European Economic Theorists (ASSET), University of Alicante, Spain, Oct. 2010.

#### Congestion in R&D Collaboration Networks:

- 7th UK Social Network Conference, University of Greenwich, London, Jul. 2011.

#### On the Accountability of Independent Regulatory Agencies:

- Annual Meeting of ASSET, Boğaziçi University, Istanbul, Turkey, Oct. 2009.

### **OTHER CONTRIBUTIONS**

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#### New Opportunities to Observe and Measure Innovation, Modeling, Infrastructure, and Standards:

- Presented by C. Robbins (NSF) at the Interagency Council on Statistical Policy (ICSP) Big Data Day, Committee on National Statistics (CNSTAT), Washington, DC, May 10-11, 2018.

#### Measuring Innovation and Innovation Activities in New Ways Using Non-Traditional Data Sources:

- Presented by S. Shipp (VT) at the Federal Committee on Statistical Methodology (FCSM) 2018 Research and Policy Conference, Washington DC, March 8, 2018.

#### Modeling, Infrastructures, and Standards: Enabling New Opportunities to Observe and Measure:

- Presented by S. Keller (VT) at the Arthur M. Sackler Colloquia of Sciences: Modeling and Visualizing Science and Technology Developments, Irvine, CA, December 4-5, 2017.

#### Combining Geographic and Social Proximity to Model Urban Domestic and Sexual Violence:

- Presented by C. Kelling at the American Statistical Association (ASA) Women in Statistics and Data Science Conference, Cincinnati, Ohio, Oct. 2018.
- Poster presented by C. Kelling (PSU) at The Big Data Social Science Integrative Graduate Education and Research Traineeship (BDSS-IGERT) Research Rotation Poster Session, 2018 (with C. Graif (PSU) and M. Haran (PSU)).

#### Estimating the Cost of Open Source Software:

- Poster presented by M. Evans, J. Ghebremichael, and Y. Zhang at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 8, 2017 (with C. Robbins (NSF) and S. Shipp (VT)).

#### Discovering Non-Traditional Data Sources for Business Innovation:

- Poster presented by D. Wilkin at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 8, 2017; and at the Data Science for the Public Good Symposium, Arlington, VA, Jul. 2017 (with G. Anderson (NSF) and S. Shipp (VT)).

#### Modeling Response Time to Structure Fires:

- Poster presented by M. Arnsbarger at the Data Science for Social Good Conference, Chicago, IL., Sept. 2017; Data Science for the Public Good Symposium, Arlington, VA, Jul. 2017; Biocomplexity Research Symposium, Blacksburg, VA, Nov. 1, 2016 (Best Poster Award).

#### Characterizing Communities for Crime Rate Inference:

- Poster presented by S. Pili at the Data Science for the Public Good Symposium, Arlington, VA, Jul. 2017 (with C. Kelling (PSU) and J. Goldstein (VT)).

#### How Do Events Affect Crime?:

- Poster presented by H. Brinkley at the Data Science for the Public Good Symposium, Arlington, VA, Jul. 2017 (with S. Phadke (PSU), C. Kelling (PSU) and J. Goldstein (VT)).

#### Residential Smoke Alarm Need in Arlington County:

- Poster presented by M. Arnsbarger at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 1, 2016; and at Data Science for the Public Good Symposium, Arlington, VA, Jul. 2016 (with S. Tyner (Iowa State), J. Goldstein (VT) and V. Lancaster (VT)).

#### Evaluating Innovation of Open Source Software:

- Poster presented by J. Higgins, A. Gagliano, R. Macatula at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 1, 2016 (with C. Robbins (NSF) and S. Shipp (VT)).
- Poster presented by W. Sandholtz and A. Rogers at the Data Science for the Public Good Symposium, Arlington, VA, Jul. 2016 (with C. Robbins (NSF) and S. Shipp (VT)).

### The Use of Social Media by the US Army Population:

- Poster presented by R. Whitcomb, I. McCormack, and E. Baldwin at the Biocomplexity Research Symposium, Blacksburg, VA, Nov. 1, 2016.
- Poster presented by W. Sandholtz, M. Grant, and M. Almanza at the Data Science for the Public Good Symposium, Arlington, VA, Jul. 2016.

### **TEACHING & MENTORSHIP**

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#### Thesis Committee Member:

- Adriana Kraig, PhD Candidate, World Politics/Behavioral Economics, Division of Politics and Economics, Claremont Graduate University, Feb. 2018 – Aug. 2018.

#### Graduate Mentorship:

- José Bayoán Calderón, PhD Candidate, Economics, Claremont Graduate Univ. 2018 – current
- Claire Kelling, PhD Candidate, Department of Statistics, Penn State University, 2017 – current
- Ian Crandell, Postdoctoral Associate, Biocomplexity Institute of Virginia Tech, 2017 - 2018

#### Undergraduate Mentorship (Biocomplexity Research Experience for Undergraduates), Virginia Tech:

- Madison Arnsbarger, Department of Economics, 2016 - 2017
- Eirik Iversen, Computational Modelling and Data Analytics, Fall 2017 - current
- Matthew Evans, Computational Modelling and Data Analytics (CMDA), Spring 2018
- Daniel Wilkin, Biological Systems Engineering, Fall 2017 & Spring 2018
- John Higgins, Alex Cagliano, Romcholo Macatula – CMDA, Spring 2017

#### Virginia Tech Data Science for the Public Good Student Summer Program Co-Lead & Mentorship of Undergraduate and Graduate Students:

- José Bayoán Santiago Calderón, PhD Candidate, Department of Economics, Claremont Graduate University, Summer 2018
- Daniel Wilkin, B.S., Biological Systems Engineering, Virginia Tech, Summer 2017
- Claire Kelling, PhD Candidate, Department of Statistics, Penn State University, Summer 2017
- Madison Arnsbarger, B.A., Department of Economics, Virginia Tech, Summer 2016 & 2017
- William Sandholtz, B.A., Dept. of Economics and Statistics, UC Berkeley, Summer 2016

#### Virginia Tech Data Science for the Public Good Program Co-Instructor (Summer I-II, 2017 & 2018):

Courses: Virginia Tech Honors College UH 4504: Honors Discovery and Innovation Studio (6 credits)  
Virginia Tech Honors College UH 4994: Honors Undergraduate Research (6 credits)

#### Sponsor/Mentor (Fall 2016 & 2017):

Virginia Tech Computational Modelling and Data Analytics 4864: Capstone Project Course

- Fall 2017: Matthew Evans, Joey Ghebremichael, Yusheng Zhang
- Fall 2016: John Higgins, Alex Cagliano, Romcholo Macatula
- Fall 2016: Ian McCormack, Ryan Whitcomb, and Emma Baldwin

#### Lecturer (Spring 2013):

- Biocomplexity Institute of Virginia Tech Network Dynamics Simulation and Science Laboratory, Short course, Ph.D. Level: Game Theory and Applications in Network Science

#### Graduate Teaching Assistant:

- European University Institute, Ph.D. Level: Complex Social Networks (Spring 2009),
- European University Institute, Ph.D. Level: Microeconomics I (Fall 2008)
- Boğaziçi University (Sep. 2005 – Aug. 2007): Microeconomics I-II, Game Theory, Contract Theory, Public Economics I-II, Development Economics

#### Undergraduate Teaching Assistant:

- Department of Economics, Boğaziçi University: Game Theory (Spring 2005)
- Department of Economics, Boğaziçi University: Mathematics for Economics (Fall 2003)

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**PROFESSIONAL SERVICE**

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- Program Committee Member of the Computational Social Science Society of the Americas Annual Conference
- Scientific Committee Member of the International Congress on Child and Information Safety: Digital Games
- Referee for Peer-Reviewed Journals and Conferences: Social Network Analysis and Mining; EPJ Data Science; Trends in Cognitive Sciences; Computational Social Science Society of the Americas Annual Conference; Academy of Management Annual Meeting Organization and Management Theory Division; Review of Network Economics; Social Computing, Behavioral-Cultural Modelling and Prediction; Southern Economic Journal; Journal of the Royal Society Interface
- American Association for the Advancement of Science (AAAS) Annual Meeting Poster Judge for Social Sciences
- American Statistical Association (ASA) Volunteer at the U.S. Science and Engineering Festival
- Judge at the Northern Virginia Regional Science and Engineering Fair

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**UNIVERSITY SERVICE**

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2018 – current	“Data Science for the Public Good” Student Program Co-Director, University of Virginia
2018 – current	Graduate and Undergraduate Student Coordinator, Social and Decision Analytics Division Biocomplexity Institute & Initiative, University of Virginia
2017 – 2018	Biocomplexity Institute Mission, Vision, Values Award Committee Member
2017 – 2018	Biocomplexity Institute Research Seminar Program Committee Member
2016 – 2018	Virginia Tech “Data Science for the Public Good” Student Program Co-Director
2014 – 2018	SDAL Seminar Chair, Biocomplexity Institute of Virginia Tech
2014 – 2018	Selected Ambassador of European University Institute
2013 – 2014	Graduate Seminar Co-organizer, NDSSL, Biocomplexity Institute of Virginia Tech
2009 – 2010	Elected Student Representative, European University Institute
2009 – 2010	Student Admission Committee (Ph.D.), European University Institute
2008 – 2011	Graduate Microeconomics Seminar Co-organizer, European University Institute

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**PROFESSIONAL MEMBERSHIPS**

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American Statistical Association (2014-present); American Economic Association (2012-present); European Economic Association (2012-present); Game Theory Society (2012-present); International Network for Social Network Analysis (2010-present)

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**FURTHER SKILLS**

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Languages: Turkish (native), English (fluent), Italian (intermediate), German (basic)  
Software & Programming: R, Mathematica, Stata, LaTeX, NetLogo, Pajek, Gephi, Python  
Certificates: Teaching Skills Certificate (European University institute, Sept. 2010)

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**CLEARANCE INFORMATION**

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Common Access Card (CAC), Affiliation: Contractor; Agency/Department: US Army; Exp.: Oct. 2019