

# Joshua Evan Blumenstock

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## Academic Positions

- **U.C. Berkeley**, Berkeley, CA, 2016 - *present*  
Assistant Professor, School of Information  
Director, Data-Intensive Development Lab  
Senior Fellow, Berkeley Institute for Data Science
- **University of Washington**, Seattle, WA, 2013-2016  
Assistant Professor, Information School  
Adjunct Assistant Professor, Computer Science and Engineering  
Founder and co-Director, Data Science and Analytics Laboratory

## Education

- **University of California, Berkeley**, Berkeley, CA  
Ph.D., School of Information, 2012  
M.A., Economics, 2010
- **Wesleyan University**, Middletown, CT  
B.A., Computer Science, 2003 (high honors)  
B.A., Physics, 2003 (high honors)

## Past Positions

2012      *Post-Doctoral Scholar*, Yale University Department of Economics  
2005-2006   *Founding Engineer*, HOTorNOT.com  
2003-2004   *Fellow*, Thomas J. Watson Foundation  
2002      *Intern*, Microsoft Research  
2001      *Research Associate*, Harvard Institutes of Medicine

## Honors and Awards

2018      *Hellman Fellowship*, Hellman Foundation  
2017      *Okawa Prize*, Okawa Foundation  
2017      *Wireless Innovation Prize (Finalist)*, Vodafone Foundation  
2015      *Millennium Grand Challenge Award*, Bill and Melinda Gates Foundation  
2014      *Faculty Research Award*, Google  
2013      *Early Career Faculty Award*, Intel  
2013      *Community Award*, USENIX Networked Systems Design and Implementation  
2012      *O.S. Braunstein Prize (Best Student Paper)*, Pacific Telecommunications Council  
2007-2011   *Berkeley Fellowship*, University of California at Berkeley  
2003-2004   *Watson Fellowship*, Thomas J. Watson Foundation  
2003      *Phi Beta Kappa*, Wesleyan University  
2003      *Senior Prize in Computer Science*, Wesleyan University  
2000      *Johnston Prize in Physics*, Wesleyan University

# Publications

## Journal Articles

- Blumenstock, J.E., Ghani, T., and Callen, M. (2018). Why Do Defaults Affect Behavior? Experimental Evidence from Afghanistan. *American Economic Review*, 108(10), 2868-2901. doi: [10.1257/aer.20171676](https://doi.org/10.1257/aer.20171676)
- Park, P., Blumenstock, J.E., and Macy, M. (2018). The strength of long-range ties in population-scale social networks. *Science*, 362(6421), 1410-1413. doi: [10.1126/science.aau9735](https://doi.org/10.1126/science.aau9735)
- Blumenstock, J.E. (2018). Don't forget people in the use of big data for development. *Nature*, 561(7722), 170-172. doi: [10.1038/d41586-018-06215-5](https://doi.org/10.1038/d41586-018-06215-5)
- Blumenstock, J.E. (2018). Estimating Economic Characteristics with Phone Data. *American Economic Review: Papers and Proceedings*, 108, 72-76. doi: [10.1257/pandp.20181033](https://doi.org/10.1257/pandp.20181033)
- Steele, J.E., Sundsoy, C., Pezzulo, C., Alegana, V., Bird, T., Blumenstock, J.E., Bjelland, J., Engomonsen, K., de Montjoye, Y.A., Iqbal, A., Hadiuzzaman, K., Wetter, E., Tatem, A.J., and Bengtsson, L. (2017). Mapping poverty using mobile phone and satellite data. *Journal of the Royal Society Interface*, 14(127), 1-10. doi: [10.1098/rsif.2016.0690](https://doi.org/10.1098/rsif.2016.0690)
- Blumenstock, J.E. (2016). Fighting Poverty with Data. *Science*, 353(6301), 753-754. doi: [10.1126/science.aah5217](https://doi.org/10.1126/science.aah5217)
- Blumenstock, J.E., Eagle, N., and Fafchamps, M. (2016). Airtime Transfers and Mobile Communications: Evidence in the Aftermath of Natural Disasters. *Journal of Development Economics*, 120, 157-181. doi: [10.1016/j.jdeveco.2016.01.003](https://doi.org/10.1016/j.jdeveco.2016.01.003)
- Blumenstock, J.E., Cadamuro, G., and R. On (2015). Predicting Poverty and Wealth from Mobile Phone Metadata. *Science*, 350(6264), 1073-1076. doi: [10.1126/science.aac4420](https://doi.org/10.1126/science.aac4420)
- Blumenstock, J.E. and N. Eagle (2012). Divided We Call: Disparities in Access and Use of Mobile Phones in Rwanda. *Information Technology and International Development*, 8(2), pp. 1-16.
- Blumenstock, J.E. (2012). Inferring Patterns of Internal Migration from Mobile Phone Call Records. *Information Technology for Development*, 18(2), pp. 107-125. doi: [10.1080/02681102.2011.643209](https://doi.org/10.1080/02681102.2011.643209)
- Gordon, G.J., R.V. Jensen, L.L. Hsiao, S.R. Gullans, J.E. Blumenstock, W.G. Richards, M.T. Jaklitsch, D.J. Sugarbaker, and R. Bueno (2003). Using Gene Expression Ratios to Predict Outcome Among Patients With Mesothelioma. *Journal of the National Cancer Institute*, 95(8), 598-605. doi: [10.1093/jnci/95.8.598](https://doi.org/10.1093/jnci/95.8.598)
- Gordon, GJ, RV Jensen, LL Hsiao, SR Gullans, JE Blumenstock, S Ramaswamy, WG Richards, DJ Sugarbaker, and R Bueno (2002). Translation of Microarray Data Into Clinically Relevant Cancer Diagnostic Tests Using Gene Expression Ratios in Lung Cancer and Mesothelioma. *Cancer Research*, 62(17), 4963-4967.
- Fryer, RM, J Randall, T Yoshida, LL Hsiao, JE Blumenstock, KE Jensen, T Dimofte, RV Jensen, and SR Gullans (2002). Global Analysis of Gene Expression: Methods, Interpretation, and Pitfalls. *Experimental Nephrology*, 10(2), 64-74. doi: [10.1159/000049901](https://doi.org/10.1159/000049901)
- Hsiao, LL, RV Jensen, T Yoshida, KE Clark, JE Blumenstock, and SR Gullans (2002). Correcting for Signal Errors in the Analysis of Microarray Data. *Biotechniques*, 32 (2), 330-337. doi: [10.2144/02322st06](https://doi.org/10.2144/02322st06)

## Conference and Workshop Proceedings (Computer Science Publications)

- Khan, M.R. and Blumenstock, J.E. (2019, accepted). Multi-CGN: Graph Convolutional Networks for Multi-View Networks, with Applications to Global Poverty. *The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI '19)*, Honolulu, HI.
- Cadamuro, G., Vinayak, R.K., Shapiro, J.N., Blumenstock, J.E., and Kakade, Sham. (2019, accepted). The Illusion of Change: Correcting for Bias when Inferring Changes in Sparse, Societal-Scale Data. *The 30th Annual Web Conference 2019 (WWW '19)*, San Francisco, CA.
- Weld, G., Perrier, T., Aker, J., Blumenstock, J.E., Dillon, B., Kamazi, A., Kokushubira, E., Webster, J., and Anderson, R. (2018). eKichabi: Information Access through Basic Mobile Phones in Rural Tanzania. *The 2018 ACM Conference on Human Factors in Computing Systems (CHI '18)*, Montreal, Canada. doi: [10.1145/3173574.3173707](https://doi.org/10.1145/3173574.3173707)
- Khan, M.R. and Blumenstock, J.E. (2017). Determinants of Mobile Money Adoption in Pakistan. *The Thirty-first Annual Conference on Neural Information Processing Systems (NIPS '17), Workshop on Machine Learning for the Developing World*, Long Beach, CA. arXiv: [1712.01081](https://arxiv.org/abs/1712.01081)
- Blumenstock, J.E., Maldeniya, D., and Lokanathan, S. (2017). Understanding the Impact of Urban Infrastructure: New Insights from Population-Scale Data. *The 9th IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD '17)*, Lahore, Pakistan. doi: [10.1145/3136560.3136575](https://doi.org/10.1145/3136560.3136575)
- Head, A., Manguin, M., Tran, N., and Blumenstock, J.E. (2017). Can Human Development be Measured with Satellite Imagery? *The 9th IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD '17)*, Lahore, Pakistan. doi: [10.1145/3136560.3136576](https://doi.org/10.1145/3136560.3136576)
- Shah, K., Martinez, P., Blumenstock, J.E., Dionisio, J., and Heimerl, K. (2017). An Investigation of Phone Upgrades in Remote Community Cellular Networks. *The 9th IEEE/ACM Int'l Conference on Information and Communication Technologies and Development (ICTD '17)*, Lahore, Pakistan. doi: [10.1145/3136560.3136569](https://doi.org/10.1145/3136560.3136569)
- Khan, M.R. and Blumenstock, J.E. (2016). Predictors without Borders: Behavioral Modeling of Product Adoption in Three Developing Countries. *The 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '16)*, San Francisco, CA. doi: [10.1145/2939672.2939710](https://doi.org/10.1145/2939672.2939710)
- Aulck, L, Blumenstock, J.E., and West, J (2016). Predicting Student Dropout in Higher Education. *The 33rd International Conference on Machine Learning (ICML '16), Workshop on Machine Learning in Social Good Applications*, New York, NY. arXiv: [1606.06364](https://arxiv.org/abs/1606.06364)
- Khan, M.R. and Blumenstock J.E. (2016). Machine Learning Across Cultures: Modeling the Adoption of Financial Services for the Poor. *The 33rd International Conference on Machine Learning (ICML '16), Workshop on Machine Learning in Social Good Applications*, New York, NY. arXiv: [1606.05105](https://arxiv.org/abs/1606.05105)
- Blumenstock, J.E., Keleher, N., and Reisinger, J (2016). The Premise of Local Information: Building Reliable Economic Indicators from a Decentralized Network of Contributors. *The 8th IEEE/ACM International Conference on Information and Communication Technologies and Development, Notes Track (ICTD '16)*, Ann Arbor, MI. doi: [10.1145/2909609.2909646](https://doi.org/10.1145/2909609.2909646)
- Khan, M.R., Reed, P., and Blumenstock, J.E. (2016). Observing gender dynamics and disparities with mobile phone metadata. *The 8th IEEE/ACM International Conference on Information and Communication Technologies and Development, Notes Track (ICTD '16)*, Ann Arbor, MI. doi: [10.1145/2909609.2909632](https://doi.org/10.1145/2909609.2909632)

- Blumenstock, J.E. & Keleher, N. (2015). The Price Is Right? Statistical evaluation of a crowd-sourced market information system in Liberia. *The 5th Annual ACM Symposium on Computing for Development (DEV '15)*, London, U.K. (23% Acceptance). Best paper nominee (top 3 papers). doi: [10.1145/2830629.2830647](https://doi.org/10.1145/2830629.2830647)
- Blumenstock, J.E., Callen, M., Ghani, T., and Koepke, L. (2015). Promises and Pitfalls of Mobile Money in Afghanistan: Evidence from a Randomized Control Trial. *The 7th IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD '15)*, Singapore. doi: [10.1145/2737856.2738031](https://doi.org/10.1145/2737856.2738031)
- Khan, M.R., Manoj, J., Singh, A., and Blumenstock, J.E. (2015). Behavioral Modeling for Churn Prediction: Early Indicators and Accurate Predictors of Customer Defection and Loyalty. *2015 IEEE International Congress on Big Data (Big Data '15)*, New York, NY. doi: [10.1109/BigData-Congress.2015.107](https://doi.org/10.1109/BigData-Congress.2015.107)
- Blumenstock J.E. (2014). Calling for Better Measurement: Estimating an Individual's Wealth and Well-Being from Mobile Phone Transaction Records. *The 20th ACM Conference on Knowledge Discovery and Mining (KDD '14), Workshop on Data Science for Social Good*, New York, NY.
- Young, W.M., Blumenstock, J.E., Fox, E.B., and McCormick, T.M. (2014). Detecting and classifying anomalous behavior in spatiotemporal network data. *The 20th ACM Conference on Knowledge Discovery and Mining (KDD '14), Workshop on Data Science for Social Good*, New York, NY.
- Blumenstock, J.E., Chokkalingham, R., Gaikwad, V., and Kondepudi, S. (2014). Probabilistic Inference of Unknown Locations: Exploiting Collective Behavior when Individual Data is Scarce. *The 5th ACM Symposium on Computing for Development (DEV '14)*, San Jose, CA. doi: [10.1145/2674377.2674387](https://doi.org/10.1145/2674377.2674387)
- Kelley, I. & Blumenstock, J.E. (2014). Computational Challenges in the Analysis of Large, Sparse, Spatiotemporal Data. *The 6th ACM International Workshop on Data Intensive Distributed Computing (DIDC '14)*, Vancouver, Canada. doi: [10.1145/2608020.2608025](https://doi.org/10.1145/2608020.2608025)
- Blumenstock, J.E. & Fratamico, F. (2013). Social and Spatial Ethnic Segregation: A Framework for Analyzing Segregation With Large-Scale Spatial Network Data. *The 4th Annual ACM Symposium on Computing for Development (DEV '13)*, Cape Town, South Africa. doi: [10.1145/2537052.2537061](https://doi.org/10.1145/2537052.2537061)
- McCarthy, T, DeRenzi, B, Blumenstock, J.E., & Brunskill, E. (2013). Operationalizing Outlier Detection in Community Health Programs. *The 6th IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD '13)*, Cape Town, South Africa. doi: [10.1145/2517899.2517919](https://doi.org/10.1145/2517899.2517919)
- Heimerl, K., Ali, K, Blumenstock, J.E., Gawalt, B., & Brewer, E. (2013). Expanding Rural Cellular Networks with Virtual Coverage. *the 10th USENIX Symposium on Networked Systems Design and Implementation (NSDI '13)*, Lombard, IL. Community award (for social impact).
- Mehrohtra, A., Mohan, M., Nguyen, A., & Blumenstock, J.E. (2012). The Role of Gender in Mobile Phone Use: Quantitative Evidence from Rwanda. *Proc. 5th IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD '12)*, Atlanta, GA. doi: [10.1145/2160673.2160710](https://doi.org/10.1145/2160673.2160710)
- Blumenstock, J.E. & Eagle, N. (2011). Mobile Divides: Gender, Socioeconomic Status, and Mobile Phone Use in Rwanda. *Proceedings of the 4th IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD '10)*, London, UK (14.1% Acceptance). doi: [10.1145/2369220.2369225](https://doi.org/10.1145/2369220.2369225)
- Blumenstock, J.E. (2011). Using Mobile Phone Data to Measure the Ties Between Nations. *Proceedings of the 2011 iConference*. ACM Press, pp. 195-202.

- Blumenstock, J.E., Shen, Y., & Eagle, N. (2010). A Method for Estimating the Relationship Between Phone Use and Wealth. *Proceedings of the QualMeetsQuant Workshop at ICTD*.
- Blumenstock, J.E., Gillick, D., & Eagle, N. (2010). Who's Calling? Demographics of Mobile Phone Use in Rwanda. *2010 AAAI Spring Symposium Series*. AAAI Publications, pp. 116-117.
- Blumenstock, J.E. (2008). Size Matters: Word Count as a Measure of Quality on Wikipedia. *Proceedings of the 17th International Conference on the World Wide Web (WWW '08)* (pp. 1095-1096). ACM Press. doi: [10.1145/1367497.1367673](https://doi.org/10.1145/1367497.1367673)
- Gemmell, J, R Lueder, JE Blumenstock, E Solomon, and G Bell (2003). Telephone, Television and Radio in the Home of the Future. *Internet and Multimedia Systems and Applications*, 2003, 263-268.

## Book Chapters and Other Publications

- Blumenstock, J.E., Callen, M., and Ghani, T. (2018). How Employers in Poor Countries Are Using Nudges to Help Employees Save Money. *Harvard Business Review Online*. June 15, 2018.
- Blumenstock, J.E. (2018). Design and Practice of Mobile Money. In: Maurer, B., Muharaj, S., & Small, I. *Money at the Margins Global Perspectives on Technology, Financial Inclusion and Desig.* pp. 354-371. Berghahn Books.
- Aker, J.C. and Blumenstock, J.E. (2014). The Economic Impacts of New Technologies in Africa. In: Monga, C. & Lin, J.Y. *The Oxford Handbook of Africa and Economics.* pp. 354-371. Oxford University Press.

## Working Papers

- “Migration and the Value of Social Networks” (with Guanghai Chi and Xu Tan). *Working Paper*.
- “Real-Time Measures of Poverty and Vulnerability” (with Michael Callen, Tarek Ghani, Niall Keleher, and Jacob Shapiro). *Working Paper*.
- “Digital Credit: A Snapshot of the Current Landscape” (with Eilin Francis and Jonathan Robinson). *BREAD Working Paper No. 516*.
- “Insecurity and Industrial Organization: Evidence from Afghanistan” (with Tarek Ghani, Sylvan Herskowitz, Ethan B. Kapstein, Thomas Scherer, Ott Toomet). *World Bank Policy Research working paper; no. WPS 8301*.
- “Directories for Mobile Networks” (with Brian Dillon and Jenny Aker). *Working Paper*.
- “Violence and Financial Decisions: Experimental Evidence from Mobile Money in Afghanistan” (with Michael Callen and Tarek Ghani). *Working Paper*.
- “A Society of Silent Separation: The Impact of Migration on Ethnic Segregation in Estonia” (with Ott Toomet). *Working Paper*.
- “Community Cellular Networks” (with Niall Keleher, Arman Rezaee, and Erin Troland). *In Progress*.
- “Manipulation-Proof Decision Rules” (with Dan Bjorkegren). *In Progress*.
- “Spectral Models of Security” (with Sham Kakade and Jacob Shapiro). *In Progress*.

## Grants

- Defense Advanced Research Projects Agency (2018). Privacy-Preserving Prediction (with Moritz Hardt). Budget \$365,000.
- Hellman Foundation (2018). Faculty Research Award. Budget \$60,000.
- Bill and Melinda Gates Foundation (2017). Digital Credit Observatory (with Jon Robinson). Budget \$4,060,000.
- USAID/NETHOPE (2017): Community Cellular Networks. Budget \$100,000.
- Okawa Foundation (2017). Okawa Research Grant. Budget \$10,000.
- Facebook (2017). Research gift: \$100,000.
- Office of Naval Research (2017). Spectral Models of Security (with Sham Kakade and Jacob Shapiro). Budget \$1,195,000.
- National Science Foundation (2017). Algorithms in the Field (with Sham Kakade). Budget \$600,000.
- Laura and John Arnold Foundation (2016). Afghanistan Mobile Salary Payments (with Michael Callen and Tarek Ghani). Budget \$1,385,000.
- National Science Foundation (2016). Compact Models of Massive Social Graphs (with Tyler McCormick). Budget \$150,000.
- Bill & Melinda Gates Foundation (2016). Integrating Isolated Communities. Budget \$150,000.
- World Bank Group (2016). Conflict and Private Sector Development (with Tarek Ghani and Ethan Kapstein). Budget \$255,000.
- International Growth Centre (2016). Government Mobile Salary Payments in Afghanistan (with Michael Callen and Tarek Ghani). Budget: \$60,000.
- Bill & Melinda Gates Foundation (2015). Millennium Grand Challenge Explorations: Measuring the Availability and Use of Digital Financial Services. Budget \$100,000.
- Development Innovation Labs (2015). Pilot Study: How Does First-Time Access to the Mobile Phone Network Affect Remote Communities in the Philippines? (with Eric Brewer and Kurtis Heimerl). Budget: \$45,000.
- International Growth Centre (2015). High-Resolution Measures of Poverty and Vulnerability in Afghanistan (with Michael Callen). Budget: \$62,000.
- Bill & Melinda Gates Foundation (2015). Mobile Data for Socioeconomic Indicators (with Linus Bengtsson, Caroline Buckee, Andy Tatem, and Erik Wetter). Budget \$754,794.
- UW Royalty Research Fund (2015). Migration and Networks: Theory and Evidence from Rwanda (with Xu Tan). Budget \$39,881.
- USAID Development Innovation Laboratory (2014). High-Resolution Development Indicators. Budget: \$255,000.
- International Growth Centre (2014). Modelling Urban Growth and Agglomeration with Large-Scale Mobile Phone Data (with Saad Gulzar and Sriganesh Lokanathan). Budget: \$60,000.
- UW Royalty Research Fund (2014). Segregation and “Silent Separation”: Using Large-Scale Network Data to Model the Determinants of Ethnic Segregation. Budget \$39,657.
- IZA/DFID Growth and Labour Markets in Low Income Countries (2013). The Effect of Local Labor Demand Shocks on Internal Migration and Local Wages (with Dave Donaldson). Budget: \$430,000.
- Google Faculty Research Award (2013). Shock Signals: Modeling the Response of Dynamic Spatial Networks to Severe, Unexpected Shocks. Budget: \$40,390.
- Intel (2013). Early Career Faculty Honor Award. Award: \$40,000.
- Costco (2013). Research Gift: \$60,000.
- Innovations for Poverty Action (2013). Mobile Phone-Based Defined-Contribution Accounts in Afghanistan

(with Michael Callen and Tarek Ghani). Budget: \$150,000.

- Institute for Money, Technology, and Financial Inclusion (2012). Case Studies of Mobile and Other Monies in Afghanistan (with Jan Chipchase). Budget: \$93,434.
- Center for Economic Policy Research (2012). Private Enterprise Development in Low Income Countries: Using Mobile Money to Pay Afghan Salaries (with Michael Callen and Tarek Ghani). Budget: \$35,500.
- Consortium on Financial Systems and Poverty (2012). Mobile Salary Payments in Afghanistan (with Michael Callen and Tarek Ghani). Budget: \$33,836.
- National Science Foundation (2011). Doctoral Dissertation Improvement Award: Risk Sharing Over the Rwandan Mobile Phone Network. Budget: \$11,500.
- International Growth Centre (2010). Social Networks, Phone Money Transfers, and Rainfall Shocks (with Marcel Fafchamps and Nathan Eagle). Budget: \$70,000.
- Institute for Money, Technology and Financial Inclusion (2010). Banking on the Phone: Using Novel Sources of Data to Understand the Impact of Mobile Banking in Rwanda. Budget: \$16,500.
- Networks, Electronic Commerce, and Telecommunications Institute (2010). Summer Research Grant: Mobile Phone Response to Natural Disasters. Budget: \$4,500.
- Bill and Melinda Gates Foundation (2009). Summer Research Grant: Information and Communication Technologies for Agriculture. Budget: \$3,500.
- Intel Research (2009). Cultural Politics of Technology and Consumption: Mobile Phone Use in Rwanda. Budget: \$5,000.
- Thomas J. Watson Foundation (2004). Watson Fellowship: Outreach or Evangelism? Integrating Technology into Unexposed Communities: China, South Africa, Cape Verde, Argentina, Costa Rica. Budget: \$22,000.

## Invited Keynotes, Talks, and Seminars

- Applied Micro Seminar, Brown University (scheduled)
- *Keynote Speaker*, Conference on Public Policy and Big Data, El Colegio de México (scheduled)
- Development/Trade seminar, University of Zurich (scheduled)
- Applied Microeconomics Seminar, IFPRI (scheduled)
- Departmental seminar, Instituto Tecnológico Autónomo de México (ITAM) (scheduled)
- Universidade NOVA de Lisboa, Lisbon (scheduled)
- *Keynote Speaker*, NIPS Workshop on Machine Learning for the Developing World, Montreal (December 2018)
- *Plenary Speaker*, Conference on Digital Experimentation, MIT (October 2018)
- BREAD/CEPR/LSE/TCD Workshop in Development Economics, London (September 2018)
- *Keynote Speaker*, ICWSM MPIDR Workshop (June 2018)
- Tech Talk, Google (April 2018)
- Oliver Williamson Seminar, U.C. Berkeley (March 2018)
- *Keynote Speaker*, AI for Economic Development Conference (February 2018)
- Development Seminar, Paris School of Economics (February 2018)
- Migration Seminar, Paris School of Economics (January 2018)
- Development Seminar, University of Göttingen (January 2018)
- Development Economics Network (DENeB), Berlin, Germany (January 2018)
- Management of Organizations Seminar, U.C. Berkeley Haas School of Business (January 2018)

- Development Seminar, Stanford University (October 2017)
- Joint Seminar in Development Economics, University of Washington (October 2017)
- Global Poverty Seminar, World Bank (July 2017)
- Barcelona Summer Forum, Universitat Pompeu Fabra (June 2017)
- Digital Credit Observatory, San Francisco (May 2017)
- Economics Departmental Seminar, Dartmouth University (May 2017)
- Economic Demography Workshop, Population Association of America (April 2017)
- Development Economics Seminar, U.C. Berkeley (March 2017)
- CDDRL Seminar Series, Stanford University (December 2016)
- *Keynote Speaker*, 8th International Conference on Social Informatics (November 2016)
- Shaping a Research and Policy Agenda on Big Data for Development for the Global South, Madrid, Spain (October 2016)
- Effective Altruism, U.C. Berkeley, CA (August 2016)
- Institute for Pure and Applied Mathematics, University of California Los Angeles, CA (May 2016)
- Financial Technology for Development, Google, Mountain View, CA (May 2016)
- Digital and Computational Knowledge Seminar, Wesleyan University, Middletown, CT (April 2016)
- AAI Spring Symposium, Stanford University, CA (March 2016)
- Economics Seminar, Microsoft Research, Redmond, WA (January 2016)
- Political Economy Seminar, University of Chicago, IL (November 2015)
- Development Economics Seminar, UC San Diego (November 2015)
- Computer Science Department, University of Philippines, Manila (November 2015)
- Conference on Labor Markets in Low-Income Countries, World Bank, Washington, DC (October 2015)
- Center for Effective Global Action, UC Berkeley, CA (October 2015)
- Researcher Gathering on Financial Behavior, Yale University, CT (May 2015)
- Institute for Health Metrics and Evaluation, Seattle, WA (May 2015)
- Political Methodology Seminar, Princeton University, NJ (March 2015)
- Center for Statistics and the Social Sciences, University of Washington, Seattle (March 2015)
- National Academy of Sciences, Committee on National Statistics, Irvine, CA (February 2015)
- Information and Computer Science Department, UC Irvine, CA (February 2015)
- Mobile Data and Development, International Telecommunications Union, Doha, Qatar (October 2014)
- Big Data for Development Symposium, World Bank, Washington, DC (October 2014)
- Information School, University of Maryland, College Park, MD (October 2014)
- DUB seminar, University of Washington, Seattle (October 2014)
- Data and Development Forum, LIRNEAsia, Colombo, Sri Lanka (August 2014)
- Freeman Spogli Institute for International Studies, Stanford University, CA (June 2014)
- Electrical Engineering and Computer Science, University of California, Berkeley, CA (March 2014)
- Departmental Colloquium, Department of Economics, University of Washington, Seattle (Oct. 2013)
- 8th IZA/World Bank Conference on Employment and Development, Bonn, Germany (August 2013)
- Microsoft Faculty Summit, Redmond, WA (July 2013)
- Microsoft Research New England, Cambridge, MA (April 2013)
- Departmental Colloquium, Computer Science & Engineering, Univ. Washington, Seattle. (Jan. 2013)
- Change Seminar, Computer Science & Engineering, Univ. Washington, Seattle, WA. (Jan. 2013)

- IPA/PEDL Workshop on Small and Medium Enterprise in Developing Regions, Massachusetts Institute of Technology, Cambridge, MA (November 2012)
- USAID Workshop on Technology & Development, University of California, Berkeley, CA. (Oct. 2012)
- Conference on Financial Inclusion, Asian Development Bank, Bangkok, Thailand. (August 2012)
- Evaluating Mobile Innovations for Security and Accountability (E-MISA), University of San Diego, San Diego, CA. (June 2012)
- Stanford Seminar on Liberation Technologies, Stanford University, Palo Alto, CA. (March 2012)
- NSF Conference on Networks & Development, LSU, Baton Rouge, LA. (March 2012)
- Information School, University of Michigan, Ann Arbor, MI. (February 2012)
- Dept. of Agricultural and Resource Economics, Michigan State University, Lansing, MI. (Feb. 2012)
- Information School, University of Washington, Seattle, WA. (February 2012)
- Department of Economics, University of San Francisco, San Francisco, CA. (February 2012)
- Pacific Technology Consortium Annual Meeting, Honolulu, HI. (January 2012)
- Lyndon B. Johnson School of Public Policy, University of Texas, Austin, TX. (January 2012)
- Information School, University of Maryland, College Park, MD. (January 2012)
- Dept. Telecommunication, Information Studies & Media, Michigan State, Lansing, MI. (Jan. 2012)
- Dept. Communications, Culture & Technology, Georgetown University, Georgetown, D.C., (Jan. 2012)

## Teaching

### University of California, Berkeley

- INFO 288: Big Data & Development
- INFO 251: Applied Machine Learning
- INFO 290: Information and Communications Technology and Development

### University of Washington

- INFX 574: Core Methods in Data Science (Machine Learning and Econometrics)
- INFX 573: Introduction to Data Science (Probability and Statistics)
- INFX 598: Big Data and Development
- INFO 371: Advanced Methods in Data Science

### Kigali Institute of Science and Technology, Rwanda

- KIST: Survey and Research Design and Methods

## Doctoral Student Supervision

### Post-Doctoral Supervisor

- Shekhar Mittal (PhD in Economics, UCLA)
- Jacqueline Mauro (PhD in Statistics, Carnegie Mellon University)
- Ott Toomet (PhD in Economics, Aarhus University)
- Micky Fire (PhD in Computer Science, Ben-Gurion University)

### Doctoral Committee Chair

- Robert On (U.C. Berkeley - School of Information)
- Mohammad Raza Khan (U.C. Berkeley - School of Information)
- Niall Keleher (U.C. Berkeley - School of Information)
- Guanghua Chi (U.C. Berkeley - School of Information)
- Gabriel Cadamuro (University of Washington - CSE, joint chair with Sham Kakade)

## Professional Affiliations and Activities

### Journals

- Associate Editor, *Development Engineering*
- *Referee Service and Peer Review*: Science; Nature; Proceedings of the National Academy of Sciences; American Economic Review; Quarterly Journal of Economics; AER: Insights; Review of Economics and Statistics; Journal of Development Economics; World Development; World Bank Economic Review; EPJ Data Science, Journal of African Economies; Journal of the Association for Information Science and Technology; Information Technology and International Development; Information Technology for Development; Development Engineering; IEEE Pervasive Computing; PLOS One

### Conferences

- *Conference Chair*: Evaluating Mobile Innovations for Security and Accountability, San Diego, 2012.
- *Program Chair*: Mobile Money Challenges and Innovations, Berkeley, 2013.
- *Senior Program Committee*: ICTD 2019 (Ahmedabad, India), ICTD 2017 (Lahore, Pakistan), ICTD 2016 (Ann Arbor, MI), ICTD 2015 (Singapore, Singapore), ICTD 2013 (Cape Town, South Africa).
- *Program Committee*: ACM Symposium on Computing for Development: DEV 2015 (London, UK), DEV 2014 (Palo Alto, CA); 77th ASIS&T Meeting, 2014 (Seattle, WA); ACM 22nd International World Wide Web Conference (WWW 2013), Rio de Janeiro, 2013; ACM 21st International Conference on Information and Knowledge Management (CIKM 2012), Maui, 2012; ICTD 2010, London, UK.
- *Referee Service and Peer Review*: IEEE/ACM Conference on Information and Communication Technologies and Development (ICTD); Computing for Development (DEV); ACM Human Factors in Computing Systems (CHI); ACM Computer-Supported Cooperative Work (CSCW); ACM International Conference on Information and Knowledge Management (CIKM); Hawaii Int'l Conference on System Sciences (HICSS); AAAI Spring Symposium on Artificial Intelligence for Development (AAAI-D)

### Affiliations

- Senior Fellow, Berkeley Institute for Data Science (U.C. Berkeley)
- Research Fellow, Institute for the Study of Labor (IZA, Germany)
- Research Affiliate, Center for Economic Policy Research (London, England)
- Faculty Affiliate, Center for Effective Global Action (U.C. Berkeley)
- Scientific Director, Digital Credit Observatory (U.C. Berkeley)
- Advisory Board, LIRNEasia (Sri Lanka)