

# Ceren Budak

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CURRENT EMPLOYMENT **University of Michigan, School of Information**  
Associate Professor (09/2022 to - present), Assistant Professor (11/2015 to - 08/2022)  
**University of Michigan, Computer Science and Engineering (by courtesy)**  
Associate Professor (09/2022 to - present), Assistant Professor (01/2017 to - 08/2022)  
**University of Michigan, Center for Political Studies, ISR**  
Faculty Associate *September 2022 to - present*

EDUCATION **Ph.D. in Computer Science, UC Santa Barbara** *09/07-12/12*  
**Bachelor in Computer Science, Bilkent University, Turkey** *09/03-06/07*

PUBLICATIONS In this section, student names are underlined. My name is highlighted in bold.

## Books

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- [1] Leticia Bode, **Ceren Budak**, Jonathan M Ladd, Frank Newport, Josh Pasek, Lisa O. Singh, Stuart N. Soroka, and Michael W. Traugott. “Words that Matter: How the News and Social Media Shaped the 2016 Presidential Campaign.” *Brookings Institution Press, May 26, 2020*

## Prestigious Journals

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- [1] Lisa Singh, Le Bao, Leticia Bode, **Ceren Budak**, Josh Pasek, Trivellore Raghunathan, Michael Traugott, Yanchen Wang, Nathan Wycoff. “Understanding the rationales and information environments for early, late, and nonadopters of the COVID-19 vaccine.” *npj Vaccines, September 2024*
- [2] **Ceren Budak**, Brendan Nyhan, David M Rothschild, Emily Thorson, Duncan J Watts. “Misunderstanding the harms of online misinformation”. *Nature 630.8015 (2024): 45-53.*
- [3] Julia Mendelsohn, Maya Vijan, Dallas Card, **Ceren Budak**. “Framing social movements on social media: Unpacking diagnostic, prognostic, and motivational strategies”. *Journal of Quantitative Description, May 2024.*
- [4] **Ceren Budak**, Lia Bozarth, Robert M Bond, Drew Margolin, Jason J Jones, R Kelly Garrett. “Bursts of contemporaneous publication among high-and low-credibility online information providers”. *New Media & Society, 2025.*
- [5] **Ceren Budak**, Natalie J. Stroud, Ashley Muddiman, Caroline C. Murray, Yujin Kim. The Stability of Cable and Broadcast News Intermedia Agenda Setting Across the COVID-19 Issue Attention Cycle. *Political Communication 2024.*
- [6] Ashley Muddiman, **Ceren Budak**, Caroline Murray, Yujin Kim, Natalie Jomini Stroud “Indexing theory during an emerging health crisis: how U.S. TV news indexed elite perspectives and amplified COVID-19 misinformation” *Annals of the International Communication Association (2022), DOI: 10.1080/23808985.2022.2120521*

- [7] Lia Bozarth and **Ceren Budak** “Keyword expansion techniques for mining social movement data on social media”. *EPJ Data Science*, 11(1), p.30.
- [8] Kornraphop Kawintiranon, Lisa Singh and **Ceren Budak**. Traditional and context-specific spam detection in low resource settings. *Machine Learning*, 111(7), pp.2515-2536.
- [9] **Ceren Budak**, R. Kelly Garrett, Daniel Sude “Better Crowdcoding: Strategies for Promoting Accuracy in Crowdsourced Content Analysis.” *Communication Methods and Measures (2021)*, Vol. 15, no. 2: 141-155.
- [10] Hao Peng, Qing Ke, **Ceren Budak**, Daniel Romero, Yong-Yeol Ahn. “Neural Embeddings of Scholarly Periodicals Reveal Complex Disciplinary Organizations.” *Science Advances*, 2021. Vol. 7, no. 17. doi:10.1126/sciadv.abb9004
- [11] Lia Bozarth, **Ceren Budak** “Beyond the Eye-Catchers: a Large-Scale Study of Social Movement Organizations’ Involvement in Online Protests.” *New Media & Society*. August 2020. doi:10.1177/1461444820943854.
- [12] Christopher Quarles, **Ceren Budak**, Paul Resnick. “The Shape of Educational Inequality.” *Science Advances*, 15 Jul 2020: Vol. 6, no. 2
- [13] **Ceren Budak**, Sharad Goel, Justin M. Rao. “Fair and Balanced? Quantifying Media Bias Through Crowdsourced Content Analysis.” *Public Opinion Quarterly*, Volume 80, Issue S1, 2016, Pages 250-271, <https://doi.org/10.1093/poq/nfw007>
- [14] Aydin Buluc, John R. Gilbert, **Ceren Budak**. “Solving Shortest Path Problems on the GPU.” *Parallel Computing 36(5-6): 241-253 (2010)*

*Prestigious Conferences*

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Approximate Acceptance Rates: ICWSM: 30%, WWW: 21%, CSCW: 25%, ICTD: 19%, NAACL: 26%, AAI: 24 %, EC: 27 %, VLDB: 18%, ICDM: 19%.

- [1] Joshua Ashkinaze, Julia Mendelsohn, Li Qiwei, **Ceren Budak**, Eric Gilbert. “How AI ideas affect the creativity, diversity, and evolution of human ideas: evidence from a large, dynamic experiment.” *Collective Intelligence 2025*.
- [2] Joshua Ashkinaze, Ruijia Guan, Laura Kurek, Eytan Adar, **Ceren Budak**, Eric Gilbert. “Seeing like an ai: How llms apply (and misapply) wikipedia neutrality norms.” *ICWSM 2026*.
- [3] Julia Mendelsohn, **Ceren Budak**. “When People are Floods: Analyzing Dehumanizing Metaphors in Immigration Discourse with Large Language Models.” *ACL 2025*.
- [4] Joshua Ashkinaze, Emily Fry, Narendra Edara, Eric Gilbert, **Ceren Budak**. “Plurals: A System for Guiding LLMs Via Simulated Social Ensembles.” *CHI, 2025*. *Received Honorable Mention*
- [5] Laura Kurek, **Ceren Budak**, Eric Gilbert. “Wikipedia in Wartime: Experiences of Wikipedians Maintaining Articles About the Russia-Ukraine War.” *Accepted at CSCW 2025*.
- [6] Yijing Chen, Yaguang Liu, Lisa Singh, **Ceren Budak**. “Intermedia Agenda Setting during the 2016 and 2020 US Presidential Elections.” *ICWSM 2024*.
- [7] Joshua Ashkinaze, Eric Gilbert, **Ceren Budak**. “The dynamics of (not) unfollowing misinformation spreaders.” *WWW 2024*.

- [8] Ashwin Rajadesingan, Daniel Choo, Jessica Zhang, Mia Inakage, Ceren Budak, Paul Resnick. “GuesSync!: an online casual game to reduce affective polarization.” *CSCW 2024*.
- [9] Lia Bozarth, Jane Im, Christopher Quarles, and Ceren Budak. 2023. Wisdom of Two Crowds: Misinformation Moderation on Reddit and How to Improve this Process—A Case Study of COVID-19. *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW1), pp.1-33.
- [10] Julia Mendelsohn, Sayan Ghosh, David Jurgens, Ceren Budak, “Bridging nations: quantifying the role of multilinguals in communication on social media.” *Accepted at Proceedings of the International AAAI Conference on Web and Social Media (2023)*
- [11] Ashwin Rajadesingan, Carolyn Duran, Paul Resnick, Ceren Budak. “Walking Into a Fire Hoping You Don’t Catch: Strategies and Designs to Facilitate Cross-Partisan Online Discussions.” *Proc. 25th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2021)*. Vol. 5, Article No: 393, 1:30, <https://doi.org/10.1145/3479537>.
- [12] Ashwin Rajadesingan, Ceren Budak, Paul Resnick. “Political Discussion is Abundant in Non-political Subreddits (and Less Toxic).” *Proceedings of the International AAAI Conference on Web and Social Media*, 15(1), 525-536.
- [13] Minje Choi, Ceren Budak, Daniel Romero, David Jurgens. “More than meets the tie: Examining the Role of Interpersonal Relationships in Social Networks.” *Proceedings of the International AAAI Conference on Web and Social Media*. 15(1), 105-116.
- [14] Julia Mendelsohn, Ceren Budak, David Jurgens. “Modeling Framing in Immigration Discourse on Social Media” *Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT 2021)* 2219–2263.
- [15] Lia Bozarth, Ceren Budak “Market Forces: Quantifying the Role of Top Credible Ad Servers in the Fake News Ecosystem.” *Proceedings of the International AAAI Conference on Web and Social Media*, 15(1), 83-94.
- [16] Lia Bozarth, Aparajita Saraf, Ceren Budak. “Higher Ground? How Groundtruth Labeling Impacts Our Understanding of the Spread of Fake News During the 2016 Election.” *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM’20)*, 14(1), 48-59.
- [17] Lia Bozarth, Ceren Budak. “Toward a Better Performance Evaluation Framework for Fake News Classification” *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM’20)*, 14(1), 60-71.
- [18] Ashwin Rajadesingan, Paul Resnick, Ceren Budak. “Quick, Localized Learning: How Distinctive Toxicity Norms are Maintained in Political Subreddits.” *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM’20)*, 14(1), 557-568.
- [19] Lia Bozarth, Anmol Panda, Ceren Budak, Joyojeet Pal. “From Greetings to Corruption: Politicians, Political Parties, and Tweeting in India.” *Proceedings of the 2020 International Conference on Information and Communication Technologies and Development (ICTD2020)*. Association for Computing Machinery, New York, NY, USA, Article 8, 1-13.

- [20] Danaja Maldeniya, **Ceren Budak**, Lionel Robert, and Daniel Romero. “Herding a Deluge of Good Samaritans: How GitHub Projects Respond to Increased Attention.” In *Proceedings of The Web Conference 2020 (WWW ’20)*. Association for Computing Machinery, New York, NY, USA, 2055-2065.
- [21] **Ceren Budak**. “What happened? The Spread of Fake News Publisher Content During the 2016 U.S. Presidential Election.” In *The World Wide Web Conference (WWW ’19)*. Association for Computing Machinery, New York, NY, USA, 13-150.
- [22] Ark Fangzhou Zhang, Ruihan Wang, Eric Blohm, **Ceren Budak**, Lionel Robert, and Daniel Romero. “Participation of New Editors After Times of Shock on Wikipedia.” *Proceedings of the International AAI Conference on Web and Social Media (ICWSM’19)*, 13(01), 560-571.
- [23] Mohd. Hafiz Hasan, Pascal Van Hentenryck, **Ceren Budak**, Jiayu Chen, and Chhavi Chaudhry. “Community-Based Trip Sharing for Urban Commuting.” In *Proceedings of the 32nd AAI Conference on Artificial Intelligence (AAAI’2018)*. vol. 32, no. 1, 6589-6597.
- [24] **Ceren Budak**, R. Kelly Garrett, Paul Resnick, and Julia Kamin. “Threading is Sticky: How Threaded Conversations Promote Comment System User Retention.” *Proc. 21st ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*. Article 27 (November 2017), 20 pages. (Markus Mobius was part of the inception of this paper and was inadvertently left out of the author list. We are in the process of officially adding him as an author.)
- [25] Ark Fangzhou Zhang, Danielle Livneh, **Ceren Budak**, Lionel Robert, Daniel Romero. “Crowd Development: The Interplay Between Crowd Evaluation and Collaborative Dynamics in Wikipedia.” *Proc. 21st ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*. Article 119 (November 2017), 21 pages.
- [26] Ark Fangzhou Zhang, Danielle Livneh, **Ceren Budak**, Lionel Robert, Daniel Romero. “Shocking the Crowd: The Effect of Censorship Shocks on Chinese Wikipedia.” *Proceedings of the International AAI Conference on Web and Social Media (ICWSM’17)*, 11(1).
- [27] **Ceren Budak**, Sharad Goel, Justin M. Rao, Giorgos Zervas. “Understanding Emerging Threats to the Online Advertising Ecosystem.” *Proceedings of the 2016 ACM Conference on Economics and Computation (EC ’16)*. Association for Computing Machinery, New York, NY, USA, 561?578.
- [28] **Ceren Budak**, Justin M. Rao. “Measuring the Efficiency of Charitable Giving with Content Analysis and Crowdsourcing.” *Proceedings of the International AAI Conference on Web and Social Media (ICWSM’16)*, vol. 10, no. 1. 2016.
- [29] **Ceren Budak**, Theodore Georgiou, Divyakant Agrawal, Amr El Abbadi. “GeoScope: Online Detection of Geo-Correlated Information Trends in Social Networks.” *Proceedings of VLDB Endowment (PVLDB) 2014* 7(4), 229?240.
- [30] **Ceren Budak**, Rakesh Agrawal. “On Participation in Group Chats on Twitter.” In *Proceedings of the 22nd international conference on World Wide Web (WWW ’13)*. Association for Computing Machinery, New York, NY, USA, 165?176.
- [31] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “Diffusion of Information in Social Networks: Is it All Local?” *IEEE 12th International Conference on Data Mining (ICDM’12)*, Brussels, Belgium, 2012, pp. 121-130, doi: 10.1109/ICDM.2012.74.

- [32] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “Structural Trend Analysis for Online Social Networks.” *Proceedings of VLDB Endowment (PVLDB)*, 4(10):646-656, July 2011.
- [33] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “Limiting the Spread of Misinformation in Social Networks.” *Proceedings of the 20th international conference on World Wide Web (WWW’11) pages 665-674, New York, NY, USA, 2011. ACM.*

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*Posters & Dataset Papers*

- [1] **Ceren Budak**, Ashley Muddiman, Yujin Kim, Caroline C. Murray, Natalie J. Stroud. “COVID-19 Coverage By Cable and Broadcast Networks.” *Proceedings of the International AAAI Conference on Web and Social Media*, 15(1), 952-960.
- [2] Hao Peng, **Ceren Budak**, Daniel M. Romero. “Event-Driven Analysis of Crowd Dynamics in the Black Lives Matter Online Social Movement” *In The World Wide Web Conference (WWW ’19)*. Association for Computing Machinery, New York, NY, USA, 3137-3143.
- [3] Lia Bozarth, **Ceren Budak**. “Is Slacktivism Underrated? Measuring the value of slacktivists for online social movements.” *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM’17)*, 11(1).

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*Somewhat Prestigious Journals and Refereed Conferences*

- [1] Jaren Haber, Lisa Singh, **Ceren Budak**, Josh Pasek, Rob Churchill, and Kornrhapop Kawintiranon. “Lies and presidential debates: How political misinformation spread across media streams during the 2020 election” *Harvard Kennedy School Misinformation Review*, 2021
- [2] Haber, J. R., Singh, L., **Ceren Budak**., Pasek, J., Balan, M., Callahan, R., Churchill, R., Herren, B., Kawintiranon, K. (2021). Research note: Lies and presidential debates: How political misinformation spread across media streams during the 2020 election. *Harvard Kennedy School (HKS) Misinformation Review*. doi:10.37016/mr-2020-84
- [3] Lia Bozarth, **Ceren Budak** “An Analysis of the Partnership between Retailers and Low-credibility News Publishers.” *Journal of Quantitative Description: Digital Media*, 1. <https://doi.org/10.51685/jqd.2021.010>
- [4] Lisa Singh, Leticia Bode, **Ceren Budak**, Kornrhapop Kawintiranon, Colton Padden, and Emily Vraga. “Understanding high-and low-quality URL Sharing on COVID-19 Twitter streams.” *Journal of Computational Social Science* 3, no. 2 (2020): 343-366.
- [5] **Ceren Budak**, Duncan J. Watts. “Dissecting the Spirit of Gezi: Influence vs. selection in the Occupy Gezi movement.” *Sociological Science*. 2(18), 370-397.
- [6] Divyakant Agrawal, Amr El Abbadi, Vaibhav Arora, **Ceren Budak**, Theodore Georgiou, Hatem A. Mahmoud, Faisal Nawab, Cetin Sahin, Shiyuan Wang. “Mind your Ps and Vs: A perspective on the challenges of big data management and privacy concerns.” *BigComp 2015: 1-6*
- [7] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “Where the Blogs Tip: Connectors, Mavens, Salesmen and Translators of the Blogosphere.” *Proceedings of the First Workshop on Social Media Analytics (SOMA ’10) pages: 106-114, New York, NY, USA, 2010. ACM.*

- [8] Divyakant Agrawal, **Ceren Budak**, Amr El Abbadi, Theodore Georgiou, Xifeng Yan. “Big Data in Online Social Networks: User Interaction Analysis to Model User Behavior in Social Networks.” *DNIS 2014: 1-16*

#### *Tutorials*

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- [1] Divyakant Agrawal, **Ceren Budak**, Amr El Abbadi. “Information Diffusion in Social Networks: Observing and Affecting What Society Cares About.” *Proceedings of the 20th ACM Conference on Information and Knowledge Management (CIKM 2011) pages: 2609-2610*
- [2] Divyakant Agrawal, **Ceren Budak**, Amr El Abbadi. “Information Diffusion in Social Networks: Observing and Influencing Societal Interests.” *Proceedings of VLDB Endowment (PVLDB), 4(12): 1512-1513 (2011)*

#### *Book Chapters*

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- [1] Josh Pasek, Lisa O. Singh, Yifang Wei, Stuart N. Soroka, Jonathan M. Ladd, Michael W. Traugott, **Ceren Budak**, Leticia Bode, and Frank Newport. “Attention to Campaign Events: Do Twitter and Self-Report Metrics Tell the Same Story?.” *Big Data Meets Survey Science: A Collection of Innovative Methods (2020): 193-216*.
- [2] Divyakant Agrawal, Bassam Bamieh, **Ceren Budak**, Amr El Abbadi, Andrew J. Flanagan, Stacy Patterson. “Data-Driven Modeling and Analysis of Online Social Networks.” *Web-Age Information Management, volume 6897 of Lecture Notes in Computer Science, pages 3-17. Springer Berlin / Heidelberg, 2011*

#### *Abstracts*

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- [1] Laura Kurek, Eric Gilbert, **Ceren Budak**. “Follow Nudges: Targeting Inaccurate Health Information Networks via a Large-Scale Online Field Experiment.” *International Conference on Computational Social Science (IC2S2 2025)*.
- [2] Julia Mendelsohn, **Ceren Budak**. “When People are Floods: Analyzing Dehumanizing Metaphors in Immigration Discourse with Large Language Models.” *International Conference on Computational Social Science (IC2S2 2025)*.
- [3] Arianna Pera, Luca Maria Aiello, **Ceren Budak**. “Labor Unions Organization and Digital Media Strategies.” *Conference On Computational Social Science (CSItaly 2025)*.
- [4] Joshua Ashkinaze, Eric Gilbert, **Ceren Budak**. “Plurals: A system for pluralistic AI via simulated social ensembles.” *Pluralistic Alignment Workshop at Neurips, 2024*.
- [5] Julia Mendelsohn, Maya Vijan, Dallas Card, **Ceren Budak**. “Framing Social Movements on Social Media: Unpacking Diagnostic, Prognostic, and Motivational Strategies.” *International Conference on Computational Social Science (WiNLP 2024)*.
- [6] Laura Kurek, **Ceren Budak**, Eric Gilbert. “Wikipedia in Wartime: Experiences of Wikipedians Maintaining Articles About the Russia-Ukraine War.” *Wiki Workshop 2024*.
- [7] Joshua Ashkinaze, Eric Gilbert, **Ceren Budak**. “The Dynamics of (Not) Unfollowing Misinformation Spreaders.” *International Conference on Computational Social Science (IC2S2 2024)*.

- [8] Patrick Gordon Wall, Julia Mendelsohn, **Ceren Budak**. “Who gets to frame? Peer and group-level dynamics of political framing on social media.” *International Conference on Computational Social Science (IC2S2 2024)*.
- [9] Joshua Ashkinaze, **Ceren Budak**, Eric Gilbert. “PlurChain: Towards a Society of Pluralistic Artificial Intelligence.” *International Conference on Computational Social Science (IC2S2 2024)*.
- [10] Joshua Ashkinaze, Julia Mendelsohn, Li Qiwei, **Ceren Budak**, Eric Gilbert. “How AI Ideas Affect the Creativity, Diversity, and Evolution of Human Ideas: Evidence From a Large, Dynamic Experiment.” *International Conference on Computational Social Science (IC2S2 2024)*.
- [11] Jaren Haber, Lisa Singh, **Ceren Budak**, Josh Pasek, Meena Balan, Ryan Callahan, Rob Churchill, Brandon Herren and Kornraphop Kawintiranon. “Lies and Presidential Debates: How Political Misinformation Spread Across Media Streams during the 2020 Election.” *International Conference on Computational Social Science (IC2S2 2022)*.
- [12] Christopher Quarles, **Ceren Budak** and Paul Resnick. “The Distribution of Educational Inequality.” *International Conference on Computational Social Science (IC2S2 2020)*.
- [13] Ashwin Rajadesingan, Paul Resnick, **Ceren Budak**. “Quick, Localized Learning: How Distinctive Toxicity Norms are Maintained in Political Subreddits.” *International Conference on Computational Social Science (IC2S2 2020)*.
- [14] Lia Bozarth and **Ceren Budak** “Quantifying the Role of Top Credible Ad Servers in the Fake News Ecosystem.” *International Conference on Computational Social Science (IC2S2 2020)*.
- [15] Lia Bozarth and **Ceren Budak** “Measuring Ideological Bias in Fake News Classifiers.” *International Conference on Computational Social Science (IC2S2 2020)*.
- [16] Danaja Maldeniya, **Ceren Budak**, Lionel P. Robert and Daniel M. Romero. “How GitHub Projects Respond to Increased Attention.” *International Conference on Computational Social Science (IC2S2 2020)*.
- [17] Minje Choi, David Jurgens, Daniel Romero and **Ceren Budak**. “Interpersonal relationships and their effects on communication behavior in Twitter.” *International Conference on Computational Social Science (IC2S2 2020)*.
- [18] Hao Peng, **Ceren Budak**, Daniel Romero. “Event-Driven Modeling of Crowd Dynamics in Online Social Movements.” *International Conference on Computational Social Science (IC2S2 2018)*.
- [19] Lia Bozarth, **Ceren Budak**. “Measuring the Value of Low-Cost Activism for Online Social and Political Movements.” *International Conference on Computational Social Science (IC2S2 2017)*.
- [20] **Ceren Budak**, Justin M. Rao. “Who Cares About the Overhead? Measuring the Efficiency in the Charity Marketplace.” *International Conference on Computational Social Science (IC2S2 2017)*.
- [21] **Ceren Budak**, Sharad Goel, Justin M. Rao. “Fair and Balanced? Quantifying Media Bias Through Crowdsourced Content Analysis.” *Social science track at ICWSM 2015*

- [22] **Ceren Budak**, Duncan J. Watts. “Dissecting the Spirit of Gezi: Influence vs. selection in the Occupy Gezi movement.” *Social science track at ICWSM 2015*
- [23] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “The Fallacy of Pigeonholing Global Users into Local Models” *Workshop for Information and Decisions in Social Networks (WIDS 2012)*.
- [24] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “Information Diffusion in Social Networks: Is Friendship the Dominant Force?” *Workshop on Information in Networks (WIN 2012)*
- [25] **Ceren Budak**, Divyakant Agrawal, Amr El Abbadi. “Structure-Aware Trend Detection in Online Social Networks.” *Workshop on Information in Networks (WIN 2011)*

#### *White Papers & Reports*

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- [1] Zeina Mneimneh, Josh Pasek, Lisa Singh, Rachel Best, Leticia Bode, Elizabeth Bruch, **Ceren Budak**, Pam Davis-Kean, Katharine Donato, Nicole Ellison, Andrew Gelman, Erica Groshen, Libby Hemphill, William Hobb, Brad Jensen, George Karypis, Jonathan Ladd, Amy O’Hara, Trivellore Raghunathan, Philip Resnik, Rebecca Ryan, Stuart Soroka, Michael Traugott, Brady T. West, and Stefan Wojcik. “Data Acquisition, Sampling, and Data Preparation Considerations for Quantitative Social Science Research Using Social Media Data.” PsyArXiv (2021).
- [2] Lisa Singh, Shweta Bansal, Leticia Bode, **Ceren Budak**, Guangqing Chi, Kornraphop Kawintiranon, Colton Padden, Rebecca Vanarsdall, Emily Vraga, and Yanchen Wang. “A first look at COVID-19 information and misinformation sharing on Twitter.” arXiv preprint arXiv:2003.13907 (2020).
- [3] Jonathan Ladd, Rebecca Ryan, Lisa Singh, Leticia Bode, **Ceren Budak**, Frederick Conrad, Elizabeth Cooksey, Pamela Davis-Kean, Keenan Dworak-Fisher, Deen Freelon, Daniel Hopkins, Brad Jensen, Ken Kelley, Renee Miller, Zeina Mneimneh, Josh Pasek, Trivellore Raghunathan, Carole Roan Gresenz, Sudeepa Roy, Stuart Soroka, Michael Traugott. “Measurement Considerations for Quantitative Social Science Research Using Social Media Data.” (2020).
- [4] Lisa Singh, Leticia Bode, Pamela Davis-Kean, Tanya Berger-Wolf, **Ceren Budak**, Guangqing Chi, Andrew Guess, Jennifer Hill, Adam Hughes, J Bradford Jensen, Frauke Kreuter, Jonathan M Ladd, Margaret Little, Zeina Mneimneh, Kevin Munger, Josh Pasek, Trivellore Raghunathan, Rebecca Ryan, Stuart Soroka, Michael Traugott. “Study Designs for Quantitative Social Science Research Using Social Media.” (2020).
- [5] Lisa Singh, Michael Traugott, Leticia Bode, **Ceren Budak**, Pamela E. Davis-Kean, Ramanathan Guha, Jonathan Ladd, Zeina Mneimneh, Quynh Nguyen, Josh Pasek, Trivellore Raghunathan, Rebecca Ryan, Stuart Soroka, Laila Wahedi. “Data Blending.” (2020).

#### *Selected Public Scholarship*

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- [1] Ashley Muddiman, **Ceren Budak**, Bryan Romas, Yujin Kim, Caroline Murray, Mary Margaret Burniston, Jessica Geiger, Alex Purcell, Jordan Ludzenski, Meg Turner, Marley Duchovany, Natalie Jomini Stroud. (December, 2020). Cable and nightly network news coverage of coronavirus. Center for Media Engagement. <https://mediaengagement.org/research/coronavirus-network-coverage>.

- [2] **Ceren Budak**, Ashley Muddiman, Natalie Jomini Stroud. “How did U.S. television news networks cover the pandemic? Here’s a scorecard. *Monkey Cage, the Washington Post*. February, 2021
- [3] **Ceren Budak**, Kornraphop Kawintiranon, Lisa Singh, and Stuart Soroka. “Real-time analysis shows that the first debate shifted attitudes among Twitter users towards Biden and the second solidified them.” London School of Economics and Political Science, USApp-American Politics and Policy Blog (2020).

FUNDED  
RESEARCH

- Social Science Research Council (the Mercury Project): *Network-transforming Interventions for Reducing the Spread of Health Misinformation Online*, PI: Eric Gilbert (University of Michigan), Co-PIs: **Ceren Budak**, Sarita Schoenebeck, Amount: \$472,794
- NSF: *CAREER: Large-Scale Examination of Problematic Online Behaviors and Their Regulators*, PI: **Ceren Budak**, Amount: \$549,999
- NSF: *Collaborative Research: GCR: The Future of Quantitative Research in Social Science*, PIs: Lisa Singh (Georgetown University), **Ceren Budak**, Co-PIs: Rebecca Ryan (Georgetown University), Zeina Mneimneh (University of Michigan), Amount: \$3.4M (UM amount: \$1.2M)
- Social Science One: *Understanding problematic sharing behavior on Facebook*, PI: Kelly Garrett (Ohio State University), Co-PIs: **Ceren Budak**, Rob Bond (Ohio State University), Jason Jones (Stony Brook University), Drew Margolin (Cornell University) Amount: \$50,000 (UM amount: \$46,966)
- NSF Small: *CHS Small: CHS: Small Systematic Comparative and Historical Analysis Framework for Contentious Politics*, PI: **Ceren Budak**, Amount: \$495,942
- NSF Small: *CHS Small: Collaborative Research: Measuring and Promoting the Quality of Online News Discussions*, PI: Paul Resnick (University off Michigan), Co-PIs: **Ceren Budak**, Kelly Garrett (Ohio State University) Amount: \$499,979
- MIDAS: *A Social Science Collaboration for Research on Communication and Learning Based Upon Big Data*, PIs: Michael Traugott, Trivellore Ragnathan (University of Michigan), Co-PIs: **Ceren Budak**, Pamela Davis-Keane, Josh Pasek, Stuart Soroka (University of Michigan) and Leticia Bode, Jonathan Ladd, Rebecca Ryan, Lisa Singh (Georgetown University), Amount: \$1,273,592
- MIDAS: *Reinventing Public Urban Transportation and Mobility*, PI: Pascal Van Hentenryck (University of Michigan), Co-PIs: **Ceren Budak**, Amy Cohn, Rebecca Cunningham, Tawanna Dillahunt, Robert Hampshire, Jerome Lynch, Jonathan Levine, Louis Merlin, Jim Sayer, Michael Wellman (University of Michigan), Luis Ortiz, (UM Dearborn), Amount: \$1,369,942
- NSF: *CHS: Small: Surviving the Storm: Large-Scale Examination of the Impact of Shocks on Crowd Attributes and Performance*, PI: Daniel Romero (University of Michigan), Co-PIs: **Ceren Budak**, Lionel Robert (University of Michigan), Amount: \$499,463

PROFESSIONAL  
ACTIVITIES

*Subject Matter Expert*

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- Pew Research Center Data Labs Advisory Board Member (since 2020).
- Member in the National Academies of Sciences, Engineering, and Medicine Committee on the “Assessment of the Impact of Social Media on the Health and Wellbeing of Adolescents and Children” (2023)

*Editorial Board Membership & Conference Organization*

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- Steering Committee Chair for International AAAI Conference on Web and Social Media (ICWSM) (2023-2025). I spent the last year shadowing the previous chair.
- Membership Committee Chair for the International Society for Computational Social Science (ISCSS) (since 2022).
- Editor in Chief for International AAAI Conference on Web and Social Media (ICWSM) 2020-2023.
- Program Committee Chair for International AAAI Conference on Web and Social Media (ICWSM) 2019
- Associate Editor for Journal of Quantitative Description (founded in 2020).
- Tutorial Chair for International Conference on Computational Social Science (IC2S2) 2017
- Registration chair for ACM Conference on Online Social Networks (COSN) 2015

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#### *Senior Program Committee Membership*

- International AAAI Conference on Web and Social Media (ICWSM) 2018, 2017, 2022, 2024
- International Conference on World Wide Web (WWW) 2017, 2019, 2020, 2021, 2022

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#### *Program Committee Membership*

- International Conference on Computational Social Science (IC2S2) 2020, 2024
- AAAI Conference on Artificial Intelligence (AAAI) 2018, 2017, 2016
- International Conference on World Wide Web (WWW) 2018, 2016, 2015
- ACM conference on Economics and Computation (EC) 2017
- International AAAI Conference on Web and Social Media (ICWSM) 2016, 2015
- WebSci (ACM Web Science Conference) 2016
- Conference on Human Computation and Crowdsourcing (HCOMP) 2016, 2015
- IEEE International Conference on Data Mining (ICDM) 2016, 2014
- International ACM Conference on Web Search and Data Mining (WSDM) 2015, 2014
- ACM Conference on Online Social Networks (COSN) 2015, 2014
- ACM Special Interest Group On Management of Data Conference (SIGMOD) 2013

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#### *Ad-hoc Editor*

PNAS

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#### *Reviewer*

PNAS, Nature, Nature Human Behaviour, Science Advances, Public Opinion Quarterly, New Media & Society, The International Journal of Press/Politics, Sociological Science, Conference on Human Factors in Computing Systems (CHI), Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), IEEE Transactions on Knowledge and Data Engineering (TKDE)

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#### *Other External Activities*

Organizer for MSR NYC Data Science Seminar Series, 2014-2015 (for more info, please visit [research.microsoft.com/en-us/events/msrnycdss/default.aspx](https://research.microsoft.com/en-us/events/msrnycdss/default.aspx))

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#### *Internal Activities*

- Internal to University of Michigan:

- MIDAS Symposium Program Committee Member, 2019
- Advanced Research Computing Advisory Team (ARCAT) Member, 2017-2019
- Organizer for Junior Faculty Sanity Club, 2018-present
- Internal to University of Michigan, School of Information:
  - United Way Representative, 2022-2023
  - Dean's Advisory Committee Elected Member, 2020-2021
  - Doctoral Committee Member, 2019-2020
  - Faculty Search Committee Member, 2018-2019, 2024-2025
  - ISR-SI Faculty search committee, 2017-2018
  - Diversity Strategic Planning Committee Member, 2015-2016
  - Organizer for the IAR (Information Analysis and Retrieval) Seminar Series, 2016-2018

## TALKS & PANELS

### *Keynote Talks*

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- The Role of Display Advertising in the Disinformation Ecosystem. *Keynote Speaker at the 4th Multidisciplinary International Symposium on Disinformation in Open Online Media— 12 October, 2022*
- Quantifying Political Phenomena on Social Media: Challenges in Data Collection, Labeling, and Classification. *Keynote Speaker at The fourth annual Politics and Computational Social Science (PaCSS) conference —13 August, 2021.*
- Regulators of Problematic Online Behavior. *Keynote Speaker at the International Conference on Computational Social Science (IC2S2 2020) —19 July 2020.*
- What happened? The Spread of Fake News Publisher Content During the 2016 Election. *Junior keynote speaker for the Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS), Ann Arbor, Michigan —28 March, 2019.*

### *Other Invited Talks*

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- The Role of Environments in Behavioral Regulation: Evidence from Misinformation and Polarization Research *Penn State University—April 17, 2025.*
- How to change environments to regulate problematic behaviors. *Sabancı University—December 19, 2024.*
- The limits of high and low credibility news dichotomy. *Harvard University—December 5, 2024.*
- How to change environments to regulate problematic behaviors. *Apple University—May 22, 2024.*
- How to change environments to regulate problematic behaviors. *UC Davis—May 2, 2024.*
- The Dynamics of (Not) Unfollowing Misinformation Spreaders. *Meta Headquarters—April 18, 2024.*
- How to change environments to regulate problematic behaviors. *Stanford University—November 17, 2023.*
- The Dynamics of Unfollowing Misinformation Spreaders. *Indiana University—November 8, 2023.*
- Modeling Framing in Immigration Discourse on Twitter. *University of Texas, Austin—January 20, 2023.*
- The role of markets and norms in regulating disinformation. *New York University—November 15, 2022*
- Identifying the Ad firms and Retailers that Support Low-Credibility News Producers. *London School of Economics—September 27, 2022*
- Quantifying Political Phenomena on Social Media: Challenges in Data Collection, Labeling, and Classification. *NYU Center for Data Science seminar series —*

November 17, 2021.

- Quantifying the Role of Display Advertising in the Disinformation Ecosystem. *The Responsible Data Science and AI speaker series, UIUC* —November 5, 2021.
- Framing in Immigration Discourse on Twitter. *Facebook Core Data Science Seminar Series* —24 June 2021.
- Citizen Participation in Political Discussions Online. *Research Colloquium at the VU Amsterdam* —7 June 2021.
- Political Conversations Online - Substance and Style. *Northeastern University, SPIRAL Seminar Series* —16 April 2021.
- How to Regulate Disinformation and Toxicity Online. *ACM@UIOWA, the University of Iowa Computing Conference* —17 February 2021.
- Large-Scale Examination of Problematic Behaviors Online and their Modalities of Constraint. *University of California, Santa Barbara* —5 February 2021.
- Political Misinformation in the 2016 and 2020 U.S. Presidential Elections. *Tech and Democracy Seminar Series at Birkbeck, University of London* —19 November 2020
- Quantifying the Role of Top Credible Ad Servers in the Fake News Ecosystem *Michigan Ross Marketing Seminar Series, Ann Arbor, Michigan* —31 January, 2020.
- Examining Political Information and Behavior Online. *Social Psychology Seminar Series, University of Michigan, Ann Arbor, Michigan* —16 October, 2019.
- Examining Political Information and Behavior Online. *Stevens Institute of Technology, Hoboken, New Jersey* —14 October , 2019.
- News Producers, Politically Engaged Citizens, and Social Movement Organizations Online. *NYU, New York City, New York* —10 October, 2019
- What happened? The Spread of Fake News Publisher Content During the 2016 Election. *Facebook, Menlo Park, California* —13 May, 2018
- What happened? The Spread of Fake News Publisher Content During the 2016 Election. *Cornell Tech, New York City, New York* —15 March 2018
- Examining Social Movements through the Lens of Social Media. *University of Michigan - Sante Fe Institute Symposium on Modeling Human Behavior and Social Dynamics, Ann Arbor, Michigan* —29 March 2018.
- Examining Heterogeneity in Social Movements Using Social Media Data. *Interdisciplinary Statistical Learning Workshop, Ann Arbor, Michigan* —5 March 2018.
- A Computer Scientist’s Perspective on Social Science. *Eastern Sociological Society, Baltimore, Maryland* —22 February 2018.
- Social Movement Organizations in Online Protest Movements. *The Science of Counter-Earth retreat at Dartmouth College, May 2017.*
- Working with Corporations. *Rackham Interdisciplinary Workshop on Computational Social Science, University of Michigan, Ann Arbor, Michigan* —April 2017.
- Combining Human and Machine Intelligence to Tackle Social Science Problems: Two Case Studies. *Quicken Loans Research Talks, University of Michigan, Ann Arbor, Michigan* —February 2017.
- Constructing Ex Post Panels to Study Behavior Change in a Social Movement. *Midwest Big Data Workshop, University of Chicago, Chicago, Illinois* —September 2016.
- Quantifying Pluralism and Solidarity in Social Movements: A Case Study of Gezi Park Uprising in Turkey. *The Center for Middle East Studies Distinguished Lecture Series, University of California Santa Barbara* —November 2014
- Fair and Balanced? Quantifying U.S. News Media Bias through Crowdsourced Content Analysis *Department of Computer Science, University of California Santa Barbara* —November 2014
- Quantifying Political Slant and Selection Bias of U.S. News Media. *COSN Committee Members Workshop, Microsoft Research Mountain View, California* —July 2014
- Understanding and Managing the Diffusion of Information in Online Social Net-

- works. *NEC Tokyo, Japan —March, 2014*
- Understanding and Managing the Diffusion of Information in Online Social Networks. *Kyoto University, Kyoto, Japan —March, 2014*
- Big Data in Online Social Networks: User Interaction Analysis to Model User Behavior in Social Networks. *Keynote Speaker, 9th Annual Workshop on Databases in Networked Information Systems, University of Aizu, Aizu-Wakamatsu, Japan — March, 2014*
- The Future of Social Science Research: A Computational Social Science Perspective. *Womensphere 5th Annual Emerging Leaders Global Summit, New York City, New York —January, 2014*
- Navigating Through the Vast Space of Online Social Networks Research. *Technicolor Labs, Palo Alto, California —2012*
- Use of Online Social Networks in Business: A Case for Viral Marketing and Redefining Influentials. *Istanbul Chamber of Commerce, Istanbul, Turkey —2011*
- Information Diffusion in Online Social Networks - Exploring the Vast Problem Space. *Istanbul Sehir University, Istanbul Turkey —2011*
- Information Diffusion in Online Social Networks - Exploring the Vast Problem Space. *Koc University, Istanbul Turkey —2011*
- Information Diffusion in Social Networks: Observing and Influencing Societal Interests *Tutorial presentation with Profs. Divyakant Agrawal and Amr El Abbadi in VLDB (International Conference on Very Large Databases) —2011*
- Information Diffusion in Social Networks: Observing and Affecting What Society Cares About. *Tutorial presented single-handedly in CIKM (Conference on Information and Knowledge Management) —2011*

#### *Invited Panels*

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- Panelist at Friday Night AI: “AI to Address Misinformation and Fake News” Webinar. *University of Michigan —2 October 2020.*
- Panelist at “Misinformation and the Role of Social Media in Elections”. *Georgetown Institute of Politics and Public Service —9 September 2020.*
- Discussed our book “Words that Matter: How the News and Social Media Shaped the 2016 Presidential Campaign.” *the New Books in Political Science Podcast —22 June, 2020.*
- Panelist at Wallace House Presents “Duterte’s Facebook-Fueled Rise to Power: Manipulating Public Opinion to Capture an Election”. *Gerald R. Ford School of Public Policy, University of Michigan, Ann Arbor, Michigan —29 January, 2020.*
- Panelist at Big Data and Political Science. *MIDAS Symposium, University of Michigan, Ann Arbor, Michigan —14 November, 2019.*
- Panelist on the “Navigating a post-factual world”. *Consumer Assembly, Washington D.C. —9 May, 2019.*
- Panelist on the “Catching Fake News” panel *Dissonance event series, Ann Arbor, Michigan —27 November, 2018.*

#### PH.D. COMMITTEES

- **Ph.D. Advisees:**
  - *Lia Bozarth* (University of Michigan, School of Information) (2016-2022)
  - *Ashwin Rajadesingan* (University of Michigan, School of Information) (2017-2022)
  - *Julia Mendelsohn* (University of Michigan, School of Information) (2019-2024)
  - *Joshua Ashkinaze* (University of Michigan, School of Information) (2021-present)
  - *Laura Kurek* (University of Michigan, School of Information) (2022-present)
- **Thesis Committee Chair (or co-chair) for**
  - *Lia Bozarth* (University of Michigan, School of Information) (2016-2022)
  - *Ashwin Rajadesingan* (University of Michigan, School of Information) (2017-

- 2022)
  - *Julia Mendelsohn* (University of Michigan, School of Information) (2019-2024)
- **Prelim Committee Chair** for
  - *Lia Bozarth* (University of Michigan, School of Information)
  - *Chris Quarles* (University of Michigan, School of Information)
  - *Ashwin Rajadesingan* (University of Michigan, School of Information)
  - *Hao Peng* (University of Michigan, School of Information)
  - *Julia Mendelsohn* (University of Michigan, School of Information)
  - *Joshua Ashkinaze* (University of Michigan, School of Information)
  - *Laura Kurek* (University of Michigan, School of Information)
- **Pre-candidacy Committee Chair** for
  - *Lia Bozarth* (University of Michigan, School of Information)
  - *Hao Peng* (University of Michigan, School of Information)
  - *Chris Quarles* (University of Michigan, School of Information)
  - *Ashwin Rajadesingan* (University of Michigan, School of Information)
  - *Julia Mendelsohn* (University of Michigan, School of Information)
  - *Agrima Seth* (University of Michigan, School of Information)
  - *Joshua Ashkinaze* (University of Michigan, School of Information)
  - *Jared Katzman* (University of Michigan, School of Information)
  - *Laura Kurek* (University of Michigan, School of Information)
- **Pre-candidacy Committee Member** for
  - *Ed Platt* (University of Michigan, School of Information)
  - *Licia He* (University of Michigan, School of Information)
  - *Linfeng Li* (University of Michigan, School of Information)
  - *Megh Marathe* (University of Michigan, School of Information)
  - *Han Na Shin* (University of Michigan, School of Information)
- **Thesis Committee Member** for
  - *Julia Kamin* (University of Michigan, Department of Political Science)
  - *Hemank Lamba* (Carnegie Mellon University, School of Computer Science)
- **Prelim Committee Member** for
  - *Tamy Guberek* (University of Michigan, School of Information)
  - *Ed Platt* (University of Michigan, School of Information)
- **Qualifying Exam Committee Member** for *Babak Soleimani* (University of Michigan, Taubman College of Architecture and Urban Planning)

## TEACHING

- SI608 - Networks: This class covers topics in network analysis, from social networks to applications in information networks such as the internet. We introduce basic concepts in network theory, discuss metric and models, use software analysis tools to experiment with a wide variety of real-world network data, and study applications to areas such as information retrieval. —Fall 2017, 2018, 2019, 2020, 2021, 2022, 2024 and Winter 2016, 2017
- SI650 - Information Retrieval: In this course, students learn the underlying technologies of search engines, recommendation systems, and other powerful tools for connecting people with information, for accessing and mining unstructured information, especially text. Students learn the basic principles and algorithms for information retrieval as well as obtain hands-on experience with using existing information retrieval toolkits to set up their own search engines and improving their search accuracy. —Fall 2024
- SI618 - Data Manipulation and Analysis: This class aims to help students get started with their own data harvesting, processing, aggregation, and analysis. We cover a wide variety of topics such as using APIs to collect data, SQL, Spark through Python. In earlier iterations of the course, I used R to perform exploratory data analysis. Later versions used Python for those tasks as well.—Fall 2017, 2019, 2020, 2021, 2022 and Winter 2017

- SI699 - Big Data Analytics: This course requires students to demonstrate mastery of data collection, processing, analysis, retrieval, mining, visualization, and prediction. Students synthesize methods from information retrieval, statistical data analysis, data mining, machine learning, and other big-data related fields. They work on semester-long projects that deal with industry-scale data sets and solve real-world problems.—Winter 2019, 2020, 2021, 2025
- SIADS 699 - Capstone: This is a project-based course in which students propose and build end-to-end data science projects in their domains of interest. Students are asked to demonstrate mastery of data science concepts and methods from their MADS training and produce a creative, original, and technically rigorous portfolio piece. Projects will be supervised by instructors with regular peer review.—Winter 2023.
- Co-taught “Network Analysis: Overview and Applications To Population Science” Workshop. *The University of Michigan’s Population Studies Center, Ann Arbor, Michigan —4 June, 2019.*
- Instructor for Microsoft Research Data Science Summer School, 2015 (for more info, please visit <https://ds3.research.microsoft.com>)