

Yong-Yeol Ahn

CONTACT Quantitative Foundation Distinguished Professor
INFORMATION School of Data Science, University of Virginia
1919 Ivy Rd., Charlottesville, VA 22903

✉ yyahn@virginia.edu
🌐 yyahn.com
📞 0000-0002-4352-4301

HIGHLIGHTS Selected Honors and Grants

- PI, AFOSR MURI (\$7.5M), 2025
- IU Trustees' Teaching Award, 2023
- NVIDIA hardware grant, 2022
- Test of Time Award, ACM IMC, 2022 [A102]
- PI, AFOSR MINERVA (\$4.4M), 2019
- Kavli Fellow, 2015
- LinkedIn Economic Graph Challenge winner, 2015
- [Microsoft Research Faculty Fellowship, 2014](#)
- AKPA Outstanding Young Researcher Award, 2012

Network Science and Machine Learning

- Networks and Machine Learning: *Nature*, 2010 [A95]; *JMLR*, 2017 [A61]; *Nat. Phys.*, 2021 [A35]; *Sci. Adv.*, 2021 [A41]; *Nat. Comm.*, 2021 [A33]; *NeurIPS*, 2021 [A36]; *PNAS*, 2023 [A21]; *Nat. Comm.*, 2024 [A14]; *ICML*, 2025 [A2]
- Natural Language Processing: *ACL*, 2018 [A59]; *EMNLP*, 2021 [A30]

Computational Social Science

- Science of Science: *Lancet*, 2019 [A57]; *Nat. Hum. Behav.*, 2022 [A26]; *Sci. Adv.*, 2021 [A41]; *PNAS*, 2023 [A21]
- Beliefs and spreading phenomena: *Sci. Rep.*, 2013 [A87] and *ICWSM'14* [A84]; *PRL*, 2014 [C3] (featured in Editors' suggestion); "Complex Spreading Phenomena in Social Systems" Eds. Springer, 2018 [B2]; *Nat. Phys.*, 2021 [A35]; *Sci. Adv.*, 2024 [A12]; *Nat. Hum. Behav.*, 2025 [A9]
- Economy, mobility, and migration: *Science*, 2014 [A83]; *Nat. Comm.*, 2019 [A56]; *PNAS*, 2023 [A21]; *arXiv*, 2025 [P10]
- Public Health: *Nat. Phys.*, 2021 [A35]; *PNAS*, 2020 [A45]; *JAMA Network Open*, 2021 [A39, A38, A43]; *JMIR Human Factors*, 2021 [A32]
- Online social media: *IMC'07* [A102] (Best paper and Test of Time Award); *WWW'07* [A101]; *IMC'08* [A99]; [The Pulse of the Nation](#); *ICWSM'11* [A93]
- Gender: *ICWSM'16* [A71] *ICWSM'17* [A67]; *Lancet*, 2019 [A57]

Computational Biology and Neuroscience

- Cellular Networks: *Science*, 2011 [A92].
- Drug discovery: *PNAS*, 2010 [A97].
- Neuroscience: *PLoS Comp. Biol.*, 2011 [A94]; *Neuron*, 2015 [A76]; *Net Neurosci.*, 2019 [A58]

Cultural Science

- Computational gastronomy: *Sci. Rep.*, 2011 [A91] (the most downloaded paper in all *Nature* journals in Dec. 2011; covered by *Nature News*, *Scientific American*, etc.); *PLOS ONE*, 2013 [A89] (covered by *Wired* and MIT tech review)
- Computational history: *Science*, 2014 [A83] (a video produce by *Nature* with more than one million views; [NSF Vizzies challenge finalist](#)).
- Music and art: *R. Soc. Open Sci*, 2017 [A63]; *ISMIR'19* [A52]; *ICWSM* [A22]; *Sci. Rep.* [A15]; *Humanit. Soc. Sci. Commun.*, 2025 [A8]

ACADEMIC POSITIONS	University of Virginia , Charlottesville, VA, USA	
	Quantitative Foundation Distinguished Professor, School of Data Science	August 2025–
	Indiana University , Bloomington, IN, USA	
	Professor, Department of Informatics	July 2023–August 2025
	Adjunct Professor, Department of Statistics	June 2014–August 2025
	Associate Professor, Department of Informatics	July 2018–June 2023
	Assistant Professor, Department of Informatics	Oct 2011–June 2018
	MIT , Boston, MA, USA	
	Visiting Professor	September 2020–August 2021
	Northeastern University , Boston, MA, USA	
	Post-doctoral research associate	June 2008–May 2011
	Dana-Farber Cancer Institute, Harvard University , Boston, MA, USA	
	Visiting Researcher	June 2008–May 2011
ADVISORY BOARDS	Jacobs University , Bremen, Germany	
	ICTS fellow	March 2007–April 2007
	Visiting Researcher	July 2006–August 2006
	KAIST , Daejeon, South Korea	
	Postdoctoral Research Associate	February 2008–May 2008
	Research Assistant	March 2003–January 2008
	Teaching Assistant	March 2002–February 2003
	Sungkyunkwan University	
	International Advisory Board, Data Science Program	March 2020–current
	Indiana University	
	IU Network Science Institute Advisory Board	2021–2023
ACADEMIC PROGRAM REVIEWER	George Mason University	
	Program reviewer, Department of Computational and Data Sciences	2026
	University of Vermont	
	Program reviewer, Complex Systems and Data Science Program	2025
INDUSTRIAL POSITIONS	Janys analytics	
	Co-founder & Data scientist	May 2011–2018
EDUCATION	Ph.D. Physics, KAIST (Daejeon, South Korea), February 2008	
	- Thesis topic: Organizing Principles and Dynamics of Complex Networks - Advisor: Professor Hawoong Jeong	
	M.S. Physics, KAIST (Daejeon, South Korea), February 2003	
	B.S. Physics, KAIST (Daejeon, South Korea), February 2001	
TEACHING	Instructor, Indiana University Bloomington	
	I606 Network Science (Online & Residential)	2018–2025
	DSCI590 Data Visualization (Online)	2017–2025
	I422/I590 Data Visualization (Residential)	2013–2024
	I590 Network Science (Online)	2016, 2017

I709 Complex Systems Seminar II	2013, 2015
H400/I400/I590 Data Visualization	2012–2014
I590 Complex Networks and Their Applications	2012, 2014
I211 Information Infrastructure II	2012
H400/I400/I590 Visual Analytics	2012

Teaching Assistant, KAIST

Computational Physics, Classical Mechanics, General Physics I, II	2002–2003
---	-----------

ADVISING

Post-doctoral researchers

Wooyong Jung	2026–
Seolmin Yang	2025–
Byunghwee Lee (co-mentors: Jisun An and Haewoon Kwak)	2024–
Attila Varga (co-mentors: Staša Milojević, Filippo Menczer, and Alessandro Flammini; Senior Research Fellow at ANETI Lab at Corvinus University of Budapest)	2020–2024
Sadamori Kojaku (co-mentors: Staša Milojević, Filippo Menczer, and Alessandro Flammini; Assistant Professor at Binghamton University)	2020–2023
Shirin Nilizadeh (co-mentor: Apu Kapadia; Associate Professor at University of Texas, Arlington)	2014–2015

Visitors

Taekho You (KAIST, South Korea)	2023–2024
Louis Boucherie (DTU, Denmark)	2023–2024
Ana Caroline Medeiros (Universidade de São Paulo, Brazil)	2023–2024
Damin Lee (POSTECH, South Korea)	2023–2024
Jisung Yoon (POSTECH, South Korea)	2019–2020
Woo-Sung Jung (POSTECH, South Korea)	2018–2019
Wooseong Jo (Sungkyunkwan University, South Korea)	2016–2017
Claudia Wagner (GESIS, Germany)	2014–2015
Yu-Xiao Zhu (University of Electronic Science and Technology of China, China)	2013–2015
Zhong-Yuan Zhang (Central University of Finance and Economics, China)	2012–2013

Ph.D. students

Govind Gandhi	current
Munjung Kim	current
Larry Zhang (co-advisor: Gregory Lewis)	current
Isabel Constantino	current
Wanying Zhao	current
Patrick Kaminski (co-advisor: Brea Perry)	current
Vincent Wong (co-advisor: Rob Goldstone)	current
Rachith Aiyappa (Applied Researcher at eBay)	2025
Lili Miao (Assistant Professor at Hong Kong University of Science Technology, Guangzhou)	2025
Dakota Murray (co-advisor: Cassidy Sugimoto; Assistant Professor at University of Albany)	2021
Nathaniel Rodriguez (Machine learning engineer at Boeing)	2021
Elise Jing (AI Engineer at Stealth Startup)	2021
Jaehyuk Park (Assistant Professor at Korea Development Institute)	2020
Qing Ke (Assistant Professor at City University of Hong Kong)	2018

Ph.D. research committees

Monica Marion, Herbert Sizek, Xuan Wang, Larry Zhang, and Wanying Zhao	current
Rachith Aiyappa, Lili Miao, Maria Pope, Youngheun Jo, Bao Tran Truong,	

Pei-Ying Chen, and Matthew DeVerna	2025
John Metzcar, Siddharth Patwardhan, Aditya Tandon, and Marina Dubova	–2024
Thomas Parmer, Benjamin Lockwood, David Terner, Miguel Pebes Trujillo, Ian Wood, Kai-Cheng Yang, John Bollenbacher, and He Zhou	–2023
Shreyas Fadnavis, Sina Kianersi, Daniele Notarmuzi, Clara Boothby, and Dan Myers	–2022
Tony Lam, Alexander Barron, Rui Zhang, Elise Jing, and Satoshi Tsutsui	–2021
Yi Bu, Zheng Gao, and Murat Ozturk	–2020
Pablo Moriano and Yeonjoon Lee	–2019
Chun Guo	–2018
Alexander Gates, Santosh Manicka, Onur Varol, and Azadeh Nematzadeh	–2017
Varsha KulKarni and Andrea Avena Koenigsberger	–2016
Artemy Kolchinsky, Richard Betzel and Abhik Seal	–2015
Haipeng Zhang, Xin Shuai, Huina Mao, Shirin Nilizadeh, Jaehong Shin, and Lilian Weng	–2014
Bin Chen	–2012
Ph.D. Qualifying committees	
Andrew Claros, Fares Fahad S. Alharbi, and Joshua Nunley	current
Fan Huang and Munjung Kim	2025
Govind Gandhi, Minsuk Kim, Monica Marion, Ozgur Can Seckin, Maria Klein, and Wanying Zhao	2024
Larry Zhang, Maria Pope, Youngheun Jo, and David Terner	2023
Matthew DeVerna, Bao Tran Truong, Rachith Aiyappa, Siddarth Patwardhan, Isabel Constantino, and Anne Kavelerchik	2022
Vincent Wong, He Zhou, Taufique Hussain, and Zoher Kachwala	2021
Dan Myers, Shreyas Fadnavis, Xuan Wang, Kai-Cheng Yang, and Kenzie Givens	2020
Dakota Murray, Lili Miao, and Elham Jafari	2019
Shantanu Jain, Andrea Avena Koenigsberger, Varsha Kulkarni, Abhik Seal, Richard Betzel, Ian Wood, Omar Sosa Tzec, Pablo Moriano, Qing Ke, Chun Guo, Alexander Gates	2011-2018
External Ph.D. thesis review/committees	
Yulin Yu, University of Michigan	–2025
Fengyuan Michael Liu, NYU Abu Dhabi	–2025
Vivek Sriram, University of Pennsylvania	–2023
Trenton Ford, University of Notre Dame	–2023
Laura Jahn, University of Copenhagen	–2023
Jisung Yoon, POSTECH	–2022
Indian Institute of Technology Patna	–2021
Caitlin Gray, University of Adelaide	–2020
Milli Letizia, Università degli Studi di Pisa	–2018
Michele Coscia, Università degli Studi di Pisa	–2012
M.S. and post-undergraduate students	
Godwin Atuahene	–2025
Kenzie Givens, Akash Patil, Rasika Muralidharan, Shruthi Senthilmani, and Krishna Jillelamudi	–2024
Ashutosh Tiwari, Riya Shetti, and Steven Fields	–2023
Ashutosh Hathidara	–2022
Chris Falter	–2021
Kathleen DeBrot, Venkata Sai Dhakshesh Kolli, and Arunav Saikia	–2020
Matt Ardolino	–2019
Michael Uftring	–2018
Hao Peng	–2017

Supun Nakandala	–2016
Kengjeun Park, Harsh Pathak, and Prasanth Velamela	–2015
Soheil Jazayeri, Maiyaporn (Muk) Phanich	–2014
Dhaval Muchhala and Nakul Dhande	–2013
Ridhima Mahajan	–2012

Undergraduate students

Conor Gibbons (UVA)	2026–
Maya Uwaydat (UVA)	2026–
Jasmine Yang (IU, CeWIT Emerging Scholars REU-W)	2024–2025
Joe Malone (IU)	2024–2025
Roopa Akshadha Challa (IU, CeWIT Emerging Scholars REU-W)	2024
Anushree Divekar (IU, CEWIT Emerging Scholars REU-W)	2023–2024
Stuti Dewan (IU, CEWIT Emerging Scholars REU-W)	2022–2023
Paige Closser (IU, CEWIT Emerging Scholars REU-W)	2021–2022
Ferris Esposito, Jeremiah Stevens, and Yulin Yu (IU)	2018
Sarah Ewing and Anna Branam (IU)	2016
Luit Saikia and Shikun Ding (IU)	2015
Kehontas Rowe (Mills College) and Bryce Lewis (Bryn Mawr College)	2013

High school students (informal)

Sudhanva Deshpande, Mira Patel	2023
Ousman Berndt (Harmony School, Herald Times article)	2021
Chloe Kilman-Silver (Winsor School, co-advisors: Alan Mislove and Sune Lehmann)	2011

SELECTED HONORS

Teaching

- IU Trustees’ Teaching Award, 2023.

Conference

- ACM IMC Test of Time Award [[A102](#)], IMC, 2022
- Outstanding Reviewer Award, WSDM, 2021
- Best Paper Award [[A102](#)], ACM Internet Measurement Conference (IMC, San Diego, California, USA), 2007
- Best Oral Presentation Award, The 14th Workshop for Statistical Physics (Nami Island, Chuncheon, Korea), 2007

Scholarship

- Participant, Heidelberg Laureate Forum, 2013
- ICTS fellow, Jacobs University 2007
- Scholarship from DAAD (Germany) and KOSEF (Korea), 2006

Advisee & Mentee Achievements

- Byunghwee Lee, Best in Show Award, Datapalooza, 2025
- Wanying Zhao, Humane Studies Fellowship, Institute for Humane Studies, 2025
- Lili Miao, Eugene Garfield Doctoral Dissertation Scholarship, 2025
- Munjung Kim, Humane Studies Fellowship, Institute for Humane Studies, 2024
- Rachith Aiyappa, Humane Studies Fellowship, Institute for Humane Studies, 2024
- Lili Miao, Humane Studies Fellowship, Institute for Humane Studies, 2024
- Stuti Dewan, 1st place & People’s Choice Award in Women’s Research Poster Competition, 2024
- Stuti Dewan, 2nd place in Women’s Research Poster Competition, 2023
- Lili Miao, Excellence in Research Award, Luddy School of Informatics, Computing, and Engineering, 2022
- Lili Miao, Best Poster Award, International Conference on the Science of Science & Innovation (ICSSI), 2022

GRANTS,
AWARDS, AND
FELLOWSHIPS

List of grants and awards

- Co-PI, Sloan Foundation, Labor Implications of AI at the Nexus of Business Processes, Tasks, and Workers , 4/1/2025–3/31/2027
- PI, DoD AFOSR MURI, “BRAIN (Belief Resonance and AI Narratives): Understanding Belief-Narrative Resonance in the Era of Generative AI” , 3/1/2025–2/28/2030
- Co-PI, NSF APTO: Global Observatory and Virtual Laboratory for Science and Technology Advance , 9/1/2024–8/31/2028
- PI, NSF SoS:DCI: The scientific cost of isolationism: examining Brexit and the pandemic as natural experiments of disruptions in the global science system , 9/1/2024–8/31/2027
- Subcontractor, (PI: Erica Fuchs), NSF TIP: A National Network for Critical Technology Assessment: A First-Year Pilot, , 10/1/2022–9/30/2023
- PI, NVIDIA hardware award, “Harnessing information stored in scholarly networks”, 8 NVIDIA A100 80GB GPU cards, 04/28/2022
- PI, Vaccine Confidence Fund, “Vax That Thing Up”: The use of message framing and social contagion to promote vaccines in African American communities, 9/22/2021–02/28/2022
- Co-PI (PI: Kristina Lerman), DARPA HR001121C0168, EDIFICE: Early Detection of Influence Indicators with Machine Intelligence, 8/1/2021–7/31/2025
- Co-PI (PI: Richard Betzel), NSF 2023985, NCS-FO: Edge-centric maps of functional brain network organization and dynamics, 10/01/2020–09/30/2023
- PI, AFOSR FA9550-19-1-0391, Science Genome: A Scholarly Graph Embedding Framework to Uncover the Fundamental Dynamics of Scientific Enterprise, 08/2019–7/2024
- Co-PI (PI: Emilio Ferrara), DARPA W911NF17-C-0094, COSINE: Cognitive Online Simulation of Information Network Environments, 08/2017–12/2021
- PI, Microsoft, Microsoft Azure Research Award, 2016.
- Co-PI (PI: Cassidy Sugimoto), Indiana University, Faculty Research Support Program, 2016–2017.
- Co-I (PI: Brea Perry), NIH, R01DA039928: Doctor Shopping for Controlled Substances: Insights from Two-Mode Social Network Analysis, 08/2016–06/2021.
- Kavli Fellow, 2015: **Kavli Frontiers of Science** fellowship
- LinkedIn Economic Graph Challenge, 2015: one of **the 11 winning teams**.
- PI, Indiana University, Faculty Research Support Program, 09/2014–03/2015.
- Microsoft Research Faculty Fellowship, 2014: one of **the seven fellows**.
- Association of Korean Physicists in America, Outstanding Young Researcher Award, 2012: one of the two awardees selected in America.
- The 1st KOBIC Bioinformatics Contents Contest, Grand prize, 2007

RECENT
PUBLICATIONS

Books and Edited volumes

- [B1] James Bagrow and **Yong-Yeol Ahn**. *Working with Network Data: the Data Science of Networks*. Cambridge University Press, 2024. URL: <https://www.cambridge.org/network-data>.
- [B2] Sune Lehmann and **Yong-Yeol Ahn**, eds. *Complex Spreading Phenomena in Social Systems*. Springer, Cham, 2018. doi: [10.1007/978-3-319-77332-2](https://doi.org/10.1007/978-3-319-77332-2).

Preprints (†: equal contribution)

- [P1] Louis Boucherie, **Yong-Yeol Ahn**, and Sune Lehmann. “Adaptive cut reveals multiscale complexity in networks”. In: *Submitted* (2025). arXiv: [2512.08741](https://arxiv.org/abs/2512.08741) [[physics.soc-ph](https://arxiv.org/archive/physics)].
- [P2] Christophe Combemale, Martin Fleming, **Yong-Yeol Ahn**, and Cassidy Sugimoto. “Reconceiving the National Research Enterprise”. In: *SSRN Working Paper* (2025). DOI: [10.2139/ssrn.5570458](https://doi.org/10.2139/ssrn.5570458).

- [P3] Munjung Kim, Marios Constantinides, Sanja Šćepanović, **Yong-Yeol Ahn**, and Daniele Quercia. “The Potential Impact of Disruptive AI Innovations on U.S. Occupations”. In: *Submitted* (2025). arXiv: [2507.11403 \[cs.CY\]](#).
- [P4] Munjung Kim, Sadamori Kojaku, and **Yong-Yeol Ahn**. “Uncovering simultaneous breakthroughs with a robust measure of disruptiveness”. In: *in submission* (2025). arXiv: [2502.16845 \[cs.SI\]](#).
- [P5] Sadamori Kojaku[†], Robert Mahari[†], Sandro Claudio Lera, Esteban Moro, Alex Pentland, and **Yong-Yeol Ahn**. “Community-centric modeling of citation dynamics explains collective citation patterns in science, law, and patents”. In: *Submitted* (2025). arXiv: [2501.15552 \[physics.soc-ph\]](#).
- [P6] Lili Miao, Vincent Larivière, Byungkyu Lee, **Yong-Yeol Ahn**, and Cassidy R. Sugimoto. “Persistent Hierarchy in Contemporary International Collaboration”. In: *in preparation* (2025). arXiv: [2410.13020 \[cs.DL\]](#).
- [P7] Lili Miao, Vincent Larivière, Feifei Wang, **Yong-Yeol Ahn**, and Cassidy R. Sugimoto. “Cooperation and interdependence in global science funding”. In: *Under review in Nature Communications* (2025). arXiv: [2308.08630 \[econ.GN\]](#).
- [P8] Minsu Park, Jaehyuk Park, Fabio Rojas, and **Yong-Yeol Ahn**. “Rap Music as a Social Reflection: Exploring the Relationship Between Social Conditions and Expressions of Violence and Materialism in Rap Lyrics”. In: *Submitted* (2025). DOI: [10.31235/osf.io/4tvn5](#).
- [P9] Tao Wen, Yu-Wang Chen, Jie Zhao, Changchun Pan, Tahir Abbas Syed, Kang Hao Cheong, and **Yong-Yeol Ahn**. “Early identification of information propagation sources through generalized Bayesian inference in large-scale social networks”. In: *Submitted* (2025).
- [P10] Guangyuan Weng, Minsuk Kim, **Yong-Yeol Ahn**, and Esteban Moro. “Beyond Distance: Mobility Neural Embeddings Reveal Visible and Invisible Barriers in Urban Space”. In: *In preparation* (2025). arXiv: [2506.24061 \[cs.CY\]](#).
- [P11] Woo Seong Jo, Jaehyuk Park, Arthur Luhur, Beom Jun Kim, and **Yong-Yeol Ahn**. “Extracting hierarchical backbones from bipartite networks”. In: *In preparation* (2023). arXiv: [2002.07239 \[cs.SI\]](#).
- [P12] Jaehyuk Park, Bogdan State, Monica Bhole, Michael Bailey, and **Yong-Yeol Ahn**. “People, Places, and Ties: Landscape of social places and their social network structures”. In: *In submission* (2023). arXiv: [2101.04737 \[cs.SI\]](#).

Published articles ([†]: equal contribution)

- [A1] Rachith Aiyappa, Shruthi Senthilmani, Jisun An, Haewoon Kwak, and **Yong-Yeol Ahn**. “Benchmarking zero-shot stance detection with FlanT5-XXL: Insights from training data, prompting, and decoding strategies into its near-SoTA performance”. In: *PeerJ Computer Science* (2025). arXiv: [2403.00236 \[cs.CL\]](#).
- [A2] Rachith Aiyappa, Xin Wang, Munjung Kim, Ozgur Can Seckin, **Yong-Yeol Ahn**, and Sadamori Kojaku. “Implicit degree bias in the link prediction task”. In: *Proceedings of the 42nd International Conference on Machine Learning (ICML)*. Vancouver, Canada, July 2025. arXiv: [2405.14985 \[cs.SI\]](#).
- [A3] Isabel Constantino, Sadamori Kojaku, Santo Fortunato, and **Yong-Yeol Ahn**. “Representing the Disciplinary Structure of Physics: A Comparative Evaluation of Graph and Text Embedding Methods”. In: *Quantitative Science Studies* 6 (2025), pp. 263–280. DOI: [10.1162/qss_a_00349](#). arXiv: [2308.15706 \[cs.SI\]](#).

- [A4] Matthew DeVerna, Francesco Pierri, **Yong-Yeol Ahn**, Santo Fortunato, Alessandro Flammini, and Filippo Menczer. “Modeling the amplification of epidemic spread by individuals exposed to misinformation on social media”. In: *npj Complexity* 2 (2025), p. 11. doi: [10.1038/s44260-025-00038-y](https://doi.org/10.1038/s44260-025-00038-y). arXiv: [2402.11351](https://arxiv.org/abs/2402.11351) [cs.SI].
- [A5] Morgan Frank, **Yong-Yeol Ahn**, and Esteban Moro. “AI exposure predicts unemployment risk”. In: *PNAS Nexus* (2025), pgaf107. doi: [10.1093/pnasnexus/pgaf107](https://doi.org/10.1093/pnasnexus/pgaf107). arXiv: [2308.02624](https://arxiv.org/abs/2308.02624) [cs.CY].
- [A6] Laurent Hébert-Dufresne, **Yong-Yeol Ahn**, Antoine Allard, Vittoria Colizza, Jessica W. Crothers, Peter Sheridan Dodds, Mirta Galesic, Fakhteh Ghanbarnejad, Dominique Gravel, Ross A. Hammond, Kristina Lerman, Juniper Lovato, John J. Openshaw, S. Redner, Samuel V. Scarpino, Guillaume St-Onge, Timothy R. Tangherlini, and Jean-Gabriel Young. “One pathogen does not an epidemic make: A review of interacting contagions, diseases, beliefs, and stories”. In: *npj Complexity* 2 (2025), p. 26. doi: [10.1038/s44260-025-00050-2](https://doi.org/10.1038/s44260-025-00050-2).
- [A7] Zhuoren Jiang, Xiaozhong Liu, Yangyang Kang, Changlong Sun, **Yong-Yeol Ahn**, and Johan Bollen. “Social inequality in awareness and reaction during the cryptic transmission period of pandemic”. In: *PNAS Nexus* 4 (2025), pgaf043. doi: [10.1093/pnasnexus/pgaf043](https://doi.org/10.1093/pnasnexus/pgaf043).
- [A8] Elise Jing, Simon DeDeo, Devin Wright, and **Yong-Yeol Ahn**. “Sameness entices, but novelty enchants in fanfiction online”. In: *Humanities and Social Sciences Communications* 12 (2025), p. 1018. arXiv: [1904.07741](https://arxiv.org/abs/1904.07741) [cs.CL].
- [A9] Byunghwee Lee, Rachith Aiyappa, **Yong-Yeol Ahn**, Haewoon Kwak, and Jisun An. “A semantic embedding space based on large language models for modelling human beliefs”. In: *Nature Human Behaviour* (2025). doi: <https://doi.org/10.1038/s41562-025-02228-z>. arXiv: [2408.07237](https://arxiv.org/abs/2408.07237) [cs.CL].
- [A10] Devin R. Wright, Jisun An, and **Yong-Yeol Ahn**. “Cognitive Linguistic Identity Fusion Score (CLIFS): A Scalable Cognition-Informed Approach to Quantifying Identity Fusion from Text”. In: *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing (EMNLP)*. 2025, pp. 11632–11662. doi: [10.18653/v1/2025.emnlp-main.588](https://doi.org/10.18653/v1/2025.emnlp-main.588).
- [A11] Vivek Sriram, Jakob Woerner, **Yong-Yeol Ahn**, and Dokyoon Kim. “The interplay of sex and genotype in disease associations: a comprehensive network analysis in the UK Biobank”. In: *Human Genomics* 19 (2025), p. 4. doi: [10.1186/s40246-024-00710-9](https://doi.org/10.1186/s40246-024-00710-9).
- [A12] Rachith Aiyappa, Alessandro Flammini, and **Yong-Yeol Ahn**. “Emergence of simple and complex contagion dynamics from weighted belief networks”. In: *Science Advances* 10 (2024), eadh4439. doi: [10.1126/sciadv.adh4439](https://doi.org/10.1126/sciadv.adh4439). arXiv: [2301.02368](https://arxiv.org/abs/2301.02368) [cs.SI].
- [A13] Seongwoon Kim, **Yong-Yeol Ahn**, and Jaehyuk Park. “Labor Space: A Unifying Representation of the Labor Market via Large Language Models”. In: *Proceedings of the ACM on Web Conference 2024 (WWW)*. Singapore, Singapore, May 2024. doi: [10.1145/3589334.3645464](https://doi.org/10.1145/3589334.3645464).
- [A14] Sadamori Kojaku, Filippo Radicchi, **Yong-Yeol Ahn**, and Santo Fortunato. “Network community detection via neural embeddings”. In: *Nature Communications* 15 (2024), p. 9446. doi: [10.1038/s41467-024-52355-w](https://doi.org/10.1038/s41467-024-52355-w). arXiv: [2306.13400](https://arxiv.org/abs/2306.13400) [physics.soc-ph].
- [A15] Kangsan Lee, Jaehyuk Park, Sam Goree, David Crandall, and **Yong-Yeol Ahn**. “Social signals predict contemporary art prices better than visual features, particularly in emerging markets”. In: *Scientific Reports* 14 (2024), p. 11615. doi: [10.1038/s41598-024-60957-z](https://doi.org/10.1038/s41598-024-60957-z).
- [A16] Wanying Zhao, Fiona Guo, Kristina Lerman, and **Yong-Yeol Ahn**. “Discovering collective narratives shifts in online discussions”. In: *Proceedings of the 18th International AAAI Conference on Weblogs and Social Media (ICWSM)*. Buenos Aires, Argentina, Feb. 2024. doi: [10.1609/icwsml.v18i1.31427](https://doi.org/10.1609/icwsml.v18i1.31427). arXiv: [2307.08541](https://arxiv.org/abs/2307.08541) [cs.CL].

- [A17] Rachith Aiyappa, Jisun An, Haewoon Kwak, and **Yong-Yeol Ahn**. “Can we trust the evaluation on ChatGPT?” In: *Annual Conference of the Association for Computational Linguistics. TrustNLP: Third Workshop on Trustworthy Natural Language Processing*. 2023. DOI: [10.18653/v1/2023.trustnlp-1.5](https://doi.org/10.18653/v1/2023.trustnlp-1.5).
- [A18] Maria E. Grabe, Danielle K. Brown, Jimmy Ochieng, John Bryden, Ranada D. Robinson, **Yong-Yeol Ahn**, Alana Moss, and Wei Wang. “The Social Contagion Potential of Pro-Vaccine Messages on Black Twitter”. In: *Health Communication* 39 (2023), pp. 2598–2609. DOI: [10.1080/10410236.2023.2281075](https://doi.org/10.1080/10410236.2023.2281075).
- [A19] Sina Kianersi, Christina Ludema, Jon Agley, **Yong-Yeol Ahn**, Maria Parker, Sophie Ideker, and Molly Rosenberg. “Development and validation of a model for measuring alcohol consumption from transdermal alcohol content data among college students”. In: *Addiction* 118 (2023), pp. 2014–2025. DOI: [10.1111/add.16228](https://doi.org/10.1111/add.16228).
- [A20] Filippo Menczer, David Crandall, **Yong-Yeol Ahn**, and Apu Kapadia. “Addressing the harms of AI-generated inauthentic content”. In: *Nature Machine Intelligence* 5 (2023), pp. 679–680. DOI: [10.1038/s42256-023-00690-w](https://doi.org/10.1038/s42256-023-00690-w).
- [A21] Dakota Murray[†], Jisung Yoon[†], Sadamori Kojaku[†], Rodrigo Costas, Woo-Sung Jung, Staša Milojević, and **Yong-Yeol Ahn**. “Unsupervised embedding of trajectories captures the latent structure of scientific migration”. In: *PNAS* 120 (2023), e2305414120. DOI: [10.1073/pnas.2305414120](https://doi.org/10.1073/pnas.2305414120). arXiv: [2012.02785](https://arxiv.org/abs/2012.02785) [cs.LG].
- [A22] Yulin Yu, Pui Ying Cheung, **Yong-Yeol Ahn**, and Paramveer Dhillon. “Unique in What Sense? Heterogeneous Relationships between Multiple Types of Uniqueness and Popularity in Music”. In: *Proceedings of the 17th International AAAI Conference on Weblogs and Social Media (ICWSM)*. Limassol, Cyprus, June 2023. DOI: [10.1609/icwsml.v17i1.22199](https://doi.org/10.1609/icwsml.v17i1.22199). arXiv: [2207.12943](https://arxiv.org/abs/2207.12943) [cs.CY].
- [A23] Yuan Yuan, Eaman Jahani, Shengjia Zhao, **Yong-Yeol Ahn**, and Alex Pentland. “Implications of COVID-19 vaccination heterogeneity in mobility networks”. In: *Communication Physics* 6 (2023), p. 206. DOI: [10.1038/s42005-023-01325-7](https://doi.org/10.1038/s42005-023-01325-7).
- [A24] James Bagrow and **Yong-Yeol Ahn**. “Network Cards: concise, readable summaries of network data”. In: *Applied Network Science* 7 (2022), p. 84. DOI: [10.1007/s41109-022-00514-7](https://doi.org/10.1007/s41109-022-00514-7). arXiv: [2206.00026](https://arxiv.org/abs/2206.00026) [cs.SI].
- [A25] Rakibul Hasan, Cristobal Cheyre Forestier, **Yong-Yeol Ahn**, Roberto Hoyle, and Apu Kapadia. “The Impact of Viral Posts on Visibility and Behavior of Professionals: A Longitudinal Study of Scientists on Twitter”. In: *Proceedings of the International AAAI Conference on Web and Social Media*. Vol. 16. 2022, pp. 323–334. DOI: [10.1609/icwsml.v16i1.19295](https://doi.org/10.1609/icwsml.v16i1.19295).
- [A26] Lili Miao, Dakota Murray, Woo-Sung Jung, Vincent Larivière, Cassidy R. Sugimoto, and **Yong-Yeol Ahn**. “The latent structure of national scientific development”. In: *Nature Human Behaviour* 6 (2022), pp. 1206–1217. DOI: [10.1038/s41562-022-01367-x](https://doi.org/10.1038/s41562-022-01367-x). arXiv: [2104.10812](https://arxiv.org/abs/2104.10812) [cs.SI].
- [A27] Karandeep Singh, Gabriel Lima, Meeyoung Cha, Chiyoungh Cha, Juhi Kulshrestha, **Yong-Yeol Ahn**, and Onur Varol. “Misinformation, Believability, and Vaccine Acceptance Over 40 Countries: Takeaways From the Initial Phase of The COVID-19 Infodemic”. In: *PLOS ONE* 17 (2022), e0263381. DOI: [10.1371/journal.pone.0263381](https://doi.org/10.1371/journal.pone.0263381). arXiv: [2104.10864](https://arxiv.org/abs/2104.10864) [cs.SI].
- [A28] Lingfei Wu, Aniket Kittur, Hyejin Youn, Stasa Milojević, Erin Leahey, Stephen M. Fiore, and **Yong-Yeol Ahn**. “Metrics and mechanisms: Measuring the unmeasurable in the science of science”. In: *Journal of Informetrics* 16 (2022), p. 101290. DOI: [10.1016/j.joi.2022.101290](https://doi.org/10.1016/j.joi.2022.101290). arXiv: [2111.07250](https://arxiv.org/abs/2111.07250) [physics.soc-ph].

- [A29] Kai-Cheng Yang, Brian Aronson, Meltem Odabas, **Yong-Yeol Ahn**, and Brea Louise Perry. “Comparing measures of centrality in bipartite patient-prescriber networks: A study of drug seeking for opioid analgesics”. In: *PLOS ONE* 17 (2022), e0273569. doi: [10.1371/journal.pone.0273569](https://doi.org/10.1371/journal.pone.0273569).
- [A30] Jisun An, Haewoon Kwak, Claire S. Lee, Bogang Jun, and **Yong-Yeol Ahn**. “Predicting Anti-Asian Hateful Users on Twitter during COVID-19”. In: *EMNLP2021*. 2021. doi: [10.18653/v1/2021.findings-emnlp.398](https://doi.org/10.18653/v1/2021.findings-emnlp.398). arXiv: [2109.07296](https://arxiv.org/abs/2109.07296) [cs.CY].
- [A31] John Bollenbacher, Diogo Pacheco, Pik-Mai Hui, **Yong-Yeol Ahn**, Alessandro Flammini, and Filippo Menczer. “On the Challenges of Predicting Microscopic Dynamics of On-line Conversations”. In: *Applied Network Science* 6 (2021), p. 12. doi: [10.1007/s41109-021-00357-8](https://doi.org/10.1007/s41109-021-00357-8).
- [A32] Meeyoung Cha, Chiyoung Cha, Karandeep Singh, Gabriel Lima, **Yong-Yeol Ahn**, Juhi Kulshrestha, and Onur Varol. “Prevalence of Misinformation and Factchecks on the COVID-19 Pandemic in 35 Countries: Observational Infodemiology Study”. In: *JMIR Human Factors* 8 (2021), e23279. doi: [10.2196/23279](https://doi.org/10.2196/23279).
- [A33] Weiwei Gu, Aditya Tandon, **Yong-Yeol Ahn**, and Filippo Radicchi. “Principled approach to the selection of the embedding dimension of networks”. In: *Nature Communications* 12 (2021), p. 3772. doi: [10.1038/s41467-021-23795-5](https://doi.org/10.1038/s41467-021-23795-5). arXiv: [2004.09928](https://arxiv.org/abs/2004.09928) [physics.soc-ph].
- [A34] Elise Jing and **Yong-Yeol Ahn**. “Characterizing partisan political narrative frameworks about COVID-19 on Twitter”. In: *EPJ Data Science* 10 (2021), p. 53. doi: [10.1140/epjds/s13688-021-00308-4](https://doi.org/10.1140/epjds/s13688-021-00308-4). arXiv: [2103.06960](https://arxiv.org/abs/2103.06960) [cs.CL].
- [A35] Sadamori Kojaku, Laurent Hébert-Dufresne, Enys Mones, Sune Lehmann, and **Yong-Yeol Ahn**. “The effectiveness of backward contact tracing in networks”. In: *Nature Physics* (2021). doi: [10.1038/s41567-021-01187-2](https://doi.org/10.1038/s41567-021-01187-2). arXiv: [2005.02362](https://arxiv.org/abs/2005.02362) [q-bio.PE].
- [A36] Sadamori Kojaku, Jisung Yoon, Isabel Constantino, and **Yong-Yeol Ahn**. “Residual2vec: debiasing graph embedding with random graphs”. In: *Advances in Neural Information Processing Systems 33: Annual Conference on Neural Information Processing Systems 2021, NeurIPS 2021, December 6-14, 2021, virtual*. 2021. arXiv: [2110.07654](https://arxiv.org/abs/2110.07654) [cs.LG]. URL: <https://proceedings.neurips.cc/paper/2021/hash/ca9541826e97c4530b07dda2eba0e013-Abstract.html>.
- [A37] Haewoon Kwak, Jisun An, Elise Jing, and **Yong-Yeol Ahn**. “FrameAxis: Characterizing microframe bias and intensity with word embedding”. In: *PeerJ Computer Science* 7 (2021), e644. doi: [10.7717/peerj-cs.644](https://doi.org/10.7717/peerj-cs.644). arXiv: [2002.08608](https://arxiv.org/abs/2002.08608) [cs.CL].
- [A38] Byungkyu Lee, Kai-Cheng Yang, Patrick Kaminski, Siyun Peng, Meltem Odabas, Sumedha Gupta, Harold D. Green Jr, **Yong-Yeol Ahn**, and Brea L. Perry. “Substitution of Non-pharmacologic Therapy With Opioid Prescribing for Pain During the COVID-19 Pandemic”. In: *JAMA Network Open* 4 (2021), e2138453. doi: [10.1001/jamanetworkopen.2021.38453](https://doi.org/10.1001/jamanetworkopen.2021.38453).
- [A39] Byungkyu Lee, Wanying Zhao, Kai-Cheng Yang, **Yong-Yeol Ahn**, and Brea Perry. “Systematic Evaluation of State Policy Interventions Targeting the US Opioid Epidemic”. In: *JAMA Network Open* 4 (2021), e2036687. doi: [10.1001/jamanetworkopen.2020.36687](https://doi.org/10.1001/jamanetworkopen.2020.36687).
- [A40] Jaehyuk Park, Woo-Sung Jung, and **Yong-Yeol Ahn**. “How to understand a city with mobility”. In: *Physics & High Technology* (2021). doi: [10.3938/PhiT.30.010](https://doi.org/10.3938/PhiT.30.010).
- [A41] Hao Peng, Qing Ke, Ceren Budak, Daniel M. Romero, and **Yong-Yeol Ahn**. “Neural embeddings of scholarly periodicals reveal complex disciplinary organizations”. In: *Science Advances* 7 (2021), eabb9004. doi: [10.1126/sciadv.abb9004](https://doi.org/10.1126/sciadv.abb9004). arXiv: [2001.08199](https://arxiv.org/abs/2001.08199) [cs.DL].

- [A42] Brea Perry, Meltem Odabas, Kai-Cheng Yang, Patrick Kaminski, Byungkyu Lee, Brian Aronson, **Yong-Yeol Ahn**, Carrie Oser, Patricia Freeman, and Jeffery Talbert. “New means, new measures: Assessing prescription drug-seeking indicators over 10 years of the opioid epidemic”. In: *Addiction* 117 (2021), pp. 195–204. doi: [10.1111/add.15635](https://doi.org/10.1111/add.15635).
- [A43] Kai-Cheng Yang, Byungkyu Lee, **Yong-Yeol Ahn**, and Brea Perry. “Use of and Comorbidities Associated With Diagnostic Codes for COVID-19 in US Health Insurance Claims”. In: *JAMA Network Open* 4 (2021), e2124643. doi: [10.1001/jamanetworkopen.2021.24643](https://doi.org/10.1001/jamanetworkopen.2021.24643).
- [A44] Jisung Yoon, Kai-Cheng Yang, Woo-Sung Jung, and **Yong-Yeol Ahn**. “Persona2vec: A flexible multi-role representations learning framework for graphs”. In: *PeerJ Computer Science* 7 (2021), e439. doi: [10.7717/peerj-cs.439](https://doi.org/10.7717/peerj-cs.439). arXiv: [2006.04941](https://arxiv.org/abs/2006.04941) [cs.SI].
- [A45] Ana I. Bento, Thuy Nguyen, Coady Wing, Felipe Lozano-Rojas, **Yong-Yeol Ahn**, and Kosali Simon. “Evidence from internet search data shows information-seeking responses to news of local COVID-19 cases”. In: *PNAS* 117 (2020), pp. 11220–11222. doi: [10.1073/pnas.2005335117](https://doi.org/10.1073/pnas.2005335117). arXiv: [2004.04591](https://arxiv.org/abs/2004.04591) [cs.SI].
- [A46] Haewoon Kwak, Jisun An, and **Yong-Yeol Ahn**. “A systematic media frame analysis of 1.5 million New York Times news articles from 2000 to 2017”. In: *WebSci2020*. Southampton, United Kingdom, July 2020. doi: [10.1145/3394231.3397921](https://doi.org/10.1145/3394231.3397921). arXiv: [2005.01803](https://arxiv.org/abs/2005.01803) [cs.CY].
- [A47] Chao Lu, Yingyi Zhang, **Yong-Yeol Ahn**, Ying Ding, Chenwei Zhang, and Dandan Ma. “Co-contributorship network and division of labor in individual scientific collaborations”. In: *Journal of Association for Information Science and Technology* 71 (2020), p. 1162. doi: [10.1002/asi.24321](https://doi.org/10.1002/asi.24321).
- [A48] Kai-Cheng Yang, Brian Aronson, and **Yong-Yeol Ahn**. “BiRank: Fast and Flexible Ranking on Bipartite Networks with R and Python”. In: *The Journal of Open Source Software* 5.51 (2020), p. 2315. doi: [10.21105/joss.02315](https://doi.org/10.21105/joss.02315).
- [A49] Jim Blythe, John Bollenbacher, Di Huang, Pik-Mai Hui, Rachel Krohn, Diogo Pacheco, Goran Muric, Anna Sapienza, Alexey Tregubov, **Yong-Yeol Ahn**, Alessandro Flammini, Kristina Lerman, Filippo Menczer, Tim Weninger, and Emilio Ferrara. “Massive Multi-agent Data-Driven Simulations of the GitHub Ecosystem”. In: *Advances in Practical Applications of Survivable Agents and Multi-Agent Systems: The PAAMS Collection*. Ed. by Yves Demazeau, Eric Matson, Juan Manuel Corchado, and Fernando De la Prieta. Springer International Publishing, 2019, pp. 3–15. ISBN: 978-3-030-24209-1. doi: [10.1007/978-3-030-24209-1_1](https://doi.org/10.1007/978-3-030-24209-1_1).
- [A50] Alexander J. Gates and **Yong-Yeol Ahn**. “CluSim: a python package for calculating clustering similarity”. In: *The Journal of Open Source Software* 4.35 (2019), p. 1264. doi: [10.21105/joss.01264](https://doi.org/10.21105/joss.01264).
- [A51] Alexander J. Gates, Ian B. Wood, William P. Hetrick, and **Yong-Yeol Ahn**. “Element-centric clustering comparison unifies overlaps and hierarchy”. In: *Scientific Reports* 9 (2019), p. 8574. doi: [10.1038/s41598-019-44892-y](https://doi.org/10.1038/s41598-019-44892-y). arXiv: [1706.06136](https://arxiv.org/abs/1706.06136) [stat.ML].
- [A52] Thomas J. Parmer and **Yong-Yeol Ahn**. “Evolution of the Informational Complexity of Contemporary Western Music”. In: *ISMIR*. Nov. 2019. doi: [10.5281/zenodo.35277721](https://doi.org/10.5281/zenodo.35277721). arXiv: [1907.04292](https://arxiv.org/abs/1907.04292) [cs.SD].
- [A53] Brea L. Perry, Kai-Cheng Yang, Patrick Kaminski, Meltem Odabas, Jaehyuk Park, Michelle Martel, Carrie B. Oser, Patricia R. Freeman, **Yong-Yeol Ahn**, and Jeffery Talbert. “Co-prescription network reveals social dynamics of opioid doctor shopping”. In: *PLoS ONE* 14 (2019), e0223849. doi: [10.1371/journal.pone.0223849](https://doi.org/10.1371/journal.pone.0223849).
- [A54] Pablo Moriano, Jorge Finke, and **Yong-Yeol Ahn**. “Community-based event detection in temporal networks”. In: *Scientific Reports* 9 (2019), p. 4358. doi: [10.1038/s41598-019-40137-0](https://doi.org/10.1038/s41598-019-40137-0).

- [A55] Azadeh Nematzadeh, Giovanni Luca Ciampaglia, **Yong-Yeol Ahn**, and Alessandro Flammini. "Information overload in group communication: from conversation to cacophony in the Twitch chat". In: *Royal Society Open Science* 6 (2019), p. 191412. doi: [10.1098/rsos.191412](https://doi.org/10.1098/rsos.191412). arXiv: [1610.06497](https://arxiv.org/abs/1610.06497) [cs.SI].
- [A56] Jaheyuk Park[†], Ian B. Wood[†], Elise Jing, Azadeh Nematzadeh, Souvik Ghosh, Michael D. Conover, and **Yong-Yeol Ahn**. "Labor flow network reveals the hierarchical structure of geo-industrial clusters in the global economy". In: *Nature Communications* 10 (2019), p. 3449. doi: [10.1038/s41467-019-11380-w](https://doi.org/10.1038/s41467-019-11380-w). arXiv: [1902.04613](https://arxiv.org/abs/1902.04613) [cs.SI].
- [A57] Cassidy R. Sugimoto, **Yong-Yeol Ahn**, Elise Smith, Benoit Macaluso, and Vincent Larivière. "Factors affecting sex reporting in medical research". In: *Lancet* 393 (2019), pp. 550–559. doi: [10.1016/S0140-6736\(18\)32995-7](https://doi.org/10.1016/S0140-6736(18)32995-7).
- [A58] Nathaniel Rodriguez, Eduardo Izquierdo, and **Yong-Yeol Ahn**. "Optimal modularity and memory capacity of neural networks". In: *Network Neuroscience* 3 (2019), p. 551. doi: [10.1162/netn_a_00082](https://doi.org/10.1162/netn_a_00082). arXiv: [1706.06511](https://arxiv.org/abs/1706.06511) [cs.NE].
- [A59] Jisun An, Haewoon Kwak, and **Yong-Yeol Ahn**. "SemAxis: A Lightweight Framework to Characterize the Manifold of Domain-Specific Word Semantics Beyond Sentiment". In: *Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*. Melbourne, Australia, July 2018. doi: [10.18653/v1/P18-1228](https://doi.org/10.18653/v1/P18-1228). arXiv: [1806.05521](https://arxiv.org/abs/1806.05521) [cs.CL].
- [A60] Anne Groggel, Shirin Nilizadeh, **Yong-Yeol Ahn**, Apu Kapadia, and Fabio Rojas. "Race and the Beauty Premium: Mechanical Turk workers' evaluations of Twitter accounts". In: *Information, Communication & Society* 22 (2018), pp. 709–716. doi: [10.1080/1369118X.2018.1543443](https://doi.org/10.1080/1369118X.2018.1543443).
- [A61] Alexander J. Gates and **Yong-Yeol Ahn**. "The Impact of Random Models on Clustering Similarity". In: *Journal of Machine Learning Research* 18 (2017), pp. 1–28. arXiv: [1701.06508](https://arxiv.org/abs/1701.06508) [stat.ML].
- [A62] Qing Ke, **Yong-Yeol Ahn**, and Cassidy R. Sugimoto. "A Systematic Identification and Analysis of Scientists on Twitter". In: *PLoS One* 12.4 (2017), e0175368. doi: [10.1371/journal.pone.0175368](https://doi.org/10.1371/journal.pone.0175368). arXiv: [1608.06229](https://arxiv.org/abs/1608.06229) [cs.DL].
- [A63] Artemy Kolchinsky, Nakul Dhande, Kengjeun Park, and **Yong-Yeol Ahn**. "The Minor Fall, the Major Lift: Inferring Emotional Valence of Musical Chords through Lyrics". In: *Royal Society Open Science* 4 (2017), p. 170952. doi: [10.1098/rsos.170952](https://doi.org/10.1098/rsos.170952). arXiv: [1706.08609](https://arxiv.org/abs/1706.08609) [cs.CL].
- [A64] Juyong Lee, Zhong-Yuan Zhang, Jooyoung Lee, Bernard R. Brooks, and **Yong-Yeol Ahn**. "Inverse resolution limit of partition density and detecting overlapping communities by link-surprise". In: *Scientific Reports* 7 (2017), p. 12399. doi: [10.1038/s41598-017-12432-1](https://doi.org/10.1038/s41598-017-12432-1). arXiv: [1601.05100](https://arxiv.org/abs/1601.05100) [physics.soc-ph].
- [A65] Huina Mao, **Yong-Yeol Ahn**, Budhendra Bhaduri, and Gautam Thakur. "Improving land use inference by factorizing mobile phone call activity matrix". In: *Journal of Land Use Science* 12 (2017), pp. 138–153. doi: [10.1080/1747423X.2017.1303546](https://doi.org/10.1080/1747423X.2017.1303546).
- [A66] Ole Mouritsen, Rachel Edwards-Stuart, **Yong-Yeol Ahn**, and Sebastian E. Ahnert. "Data-driven methods for the study of food perception, preparation, consumption, and culture". In: *Frontiers in ICT* 4 (2017), p. 15. doi: [10.3389/fict.2017.00015](https://doi.org/10.3389/fict.2017.00015).
- [A67] Supun Nakandala, Giovanni L. Ciampaglia, Norman M. Su, and **Yong-Yeol Ahn**. "Gendered Conversation in a Social Game-Streaming Platform". In: *Proceedings of the 11th International AAAI Conference on Weblogs and Social Media (ICWSM'17)*. Montreal, Canada, May 2017. doi: [10.1609/icwsm.v11i1.14885](https://doi.org/10.1609/icwsm.v11i1.14885). arXiv: [1611.06459](https://arxiv.org/abs/1611.06459) [cs.SI].

- [A68] Yu-Xiao Zhu, Wei Wang, Min Tang, and **Yong-Yeol Ahn**. “Social contagions on weighted networks”. In: *Physical Review E* 96 (2017), p. 012306. DOI: [10.1103/PhysRevE.96.012306](https://doi.org/10.1103/PhysRevE.96.012306). arXiv: [1604.00467](https://arxiv.org/abs/1604.00467) [physics.soc-ph].
- [A69] Arram Bae, Doheum Park, **Yong-Yeol Ahn**, and Juyong Park. “The Multi-Scale Network Landscape of Collaboration”. In: *PLoS ONE* 11.3 (2016), e0151784. DOI: [10.1371/journal.pone.0151784](https://doi.org/10.1371/journal.pone.0151784). arXiv: [1601.07154](https://arxiv.org/abs/1601.07154) [physics.soc-ph].
- [A70] Arram Bae, Doheum Park, Juyong Park, and **Yong-Yeol Ahn**. “Network Landscape of Western Classical Music”. In: *Leonardo* 49.5 (2016), p. 448. DOI: [10.1162/LEON_a_01268](https://doi.org/10.1162/LEON_a_01268).
- [A71] Shirin Nilizadeh, Anne Groggel, Peter Lista, Srijita Das, **Yong-Yeol Ahn**, Apu Kapadia, and Fabio Rojas. “Twitter’s Glass Ceiling: The Effect of Perceived Gender on Online Visibility”. In: *Proceedings of the Tenth International AAAI Conference on Weblogs and Social Media (ICWSM’16)*. Cologne, Germany, May 2016. DOI: [10.1609/icwsm.v10i1.14711](https://doi.org/10.1609/icwsm.v10i1.14711).
- [A72] Nathaniel Rodriguez, Johan Bollen, and **Yong-Yeol Ahn**. “Collective Dynamics of Belief Evolution under Cognitive Coherence and Social Conformity”. In: *PLoS ONE* 11 (2016), e0165910. DOI: [10.1371/journal.pone.0165910](https://doi.org/10.1371/journal.pone.0165910). arXiv: [1509.01502](https://arxiv.org/abs/1509.01502) [physics.soc-ph].
- [A73] James P. Bagrow, Sune Lehmann, and **Yong-Yeol Ahn**. “Robustness and Modular Structure in Networks”. In: *Network Science* 3 (2015), pp. 509–525. DOI: [10.1017/nws.2015.21](https://doi.org/10.1017/nws.2015.21). arXiv: [1102.5085](https://arxiv.org/abs/1102.5085) [physics.soc-ph].
- [A74] Daejin Choi, Jinyoung Han, Taejoong Chung, **Yong-Yeol Ahn**, Byung-Gon Chun, and Ted T. Kwon. “Characterizing Conversation Patterns in Reddit: From the Perspectives of Content Properties and User Participation Behaviors”. In: *Proceedings of the 2015 ACM on Conference on Online Social Networks*. ACM. 2015, pp. 233–243. DOI: [10.1145/2817946.2817959](https://doi.org/10.1145/2817946.2817959).
- [A75] Huina Mao, Xin Shuai, **Yong-Yeol Ahn**, and Johan Bollen. “Quantifying socio-economic indicators in developing countries from mobile phone communication data: applications to Côte D’Ivoire”. In: *EPJ Data Science* 4.1 (2015), pp. 1–16. DOI: [10.1140/epjds/s13688-015-0053-1](https://doi.org/10.1140/epjds/s13688-015-0053-1).
- [A76] Bratislav Mišić, Richard F. Betzel, Azadeh Nematzadeh, Joaquin Goñi, Alessandra Griffo, Patric Hagmann, Alessandro Flammini, **Yong-Yeol Ahn**, and Olaf Sporns. “Cooperative and Competitive Spreading Dynamics on the Human Connectome”. In: *Neuron* 86 (2015), p. 1518. DOI: [10.1016/j.neuron.2015.05.035](https://doi.org/10.1016/j.neuron.2015.05.035).
- [A77] Abhik Seal, **Yong-Yeol Ahn**, and David Wild. “Optimizing drug-target interaction prediction based on random walk on heterogeneous networks”. In: *Journal of Cheminformatics* 7.1 (2015), p. 40. DOI: [10.1186/s13321-015-0089-z](https://doi.org/10.1186/s13321-015-0089-z).
- [A78] Zhong-Yuan Zhang and **Yong-Yeol Ahn**. “Community Detection in Bipartite Networks using Symmetric Binary Matrix Factorization”. In: *International Journal of Modern Physics C* 0 (2015), p. 1550096. DOI: [10.1142/S0129183115500965](https://doi.org/10.1142/S0129183115500965). arXiv: [1502.04428](https://arxiv.org/abs/1502.04428) [cs.SI].
- [A79] **Yong-Yeol Ahn**, Deok-Sun Lee, Henry Burd, William Blank, and Vinayak Kapatral. “Metabolic Network Analysis-Based Identification of Antimicrobial Drug Targets in Category A Bioterrorism Agents”. In: *PLOS ONE* 9 (2014), e85195. DOI: [10.1371/journal.pone.0085195](https://doi.org/10.1371/journal.pone.0085195).
- [A80] Qing Ke and **Yong-Yeol Ahn**. “Tie Strength Distribution in Scientific Collaboration Networks”. In: *Physical Review E* 90 (2014), p. 032804. DOI: [10.1103/PhysRevE.90.032804](https://doi.org/10.1103/PhysRevE.90.032804). arXiv: [1401.5027](https://arxiv.org/abs/1401.5027) [physics.soc-ph].
- [A81] Azadeh Nematzadeh, Emilio Ferrara, Alessandro Flammini, and **Yong-Yeol Ahn**. “Optimal Network Modularity for Information Diffusion”. In: *Physical Review Letters* 113 (2014), p. 088701. DOI: [10.1103/PhysRevLett.113.088701](https://doi.org/10.1103/PhysRevLett.113.088701).

- [A82] Shirin Nilizadeh, Apu Kapadia, and **Yong-Yeol Ahn**. “Community-Enhanced De-anonymization of Online Social Networks”. In: *Proceedings of the 2014 ACM SIGSAC Conference on Computer & Communications Security*. CCS’14. Scottsdale, Arizona, USA: ACM, 2014. doi: [10.1145/2660267.2660324](#).
- [A83] Maximilian Schich, Chaoming Song, **Yong-Yeol Ahn**, Alexander Mirsky, Mauro Martino, Albert-László. Barabási, and Dirk Helbing. “A Network Framework of Cultural History”. In: *Science* 345 (2014), pp. 558–562. doi: [10.1126/science.1240064](#).
- [A84] Lilian Weng, Filippo Menczer, and **Yong-Yeol Ahn**. “Predicting Successful Memes using Network and Community Structure”. In: *Proceedings of the Eighth International AAAI Conference on Weblogs and Social Media (ICWSM’14)*. Ann Arbor, MI, USA, June 2014. doi: [10.1609/icwsm.v8i1.14530](#). arXiv: [1403.6199 \[cs.SI\]](#).
- [A85] **Yong-Yeol Ahn** and Sebastian E. Ahnert. “The Flavor Network”. In: *Leonardo* 46 (2013), pp. 272–273. doi: [10.1162/LEON_a_00569](#).
- [A86] Huina Mao, Xin Shuai, **Yong-Yeol Ahn**, and Johan Bollen. “Mobile communications reveal the regional economy in Côte D’Ivoire”. In: *NetMob 2013 Special session on the D4D challenge (one of the 19 papers out of 166 submissions)*. Cambridge, MA, USA, May 2013.
- [A87] Lilian Weng, Filippo Menczer, and **Yong-Yeol Ahn**. “Virality Prediction and Community Structure in Social Networks”. In: *Scientific Reports* 3 (2013), p. 2522. doi: [10.1038/srep02522](#). arXiv: [1306.0158 \[cs.SI\]](#).
- [A88] Zhong-Yuan Zhang, Yong Wang, and **Yong-Yeol Ahn**. “Overlapping Community Detection in Complex Networks using Symmetric Binary Matrix Factorization”. In: *Physical Review E* 87 (2013), p. 062803. doi: [10.1103/PhysRevE.87.062803](#). arXiv: [1303.5855 \[cs.SI\]](#).
- [A89] Yu-Xiao Zhu, Junming Huang, Zi-Ke Zhang, Qian-Ming Zhang, Tao Zhou, and **Yong-Yeol Ahn**. “Geography and Similarity of Regional Cuisines in China”. In: *PLOS ONE* 8 (2013), e79161. doi: [10.1371/journal.pone.0079161](#). arXiv: [1307.3185 \[physics.soc-ph\]](#).
- [A90] Meeyoung Cha, Fabricio Benevenuto, **Yong-Yeol Ahn**, and Krishna P. Gummadi. “Delayed Information Cascades in Flickr: Measurement, Analysis, and Modeling”. In: *Computer Networks* 56 (2012), pp. 1066–1076. doi: [10.1016/j.comnet.2011.10.020](#).
- [A91] **Yong-Yeol Ahn**[†], Sebastian E. Ahnert[†], James P. Bagrow, and Albert-László. Barabási. “Flavor Network and the Principles of Food Pairing”. In: *Scientific Reports* 1 (2011), p. 196. doi: [10.1038/srep00196](#). arXiv: [1111.6074 \[physics.soc-ph\]](#).
- [A92] Arabidopsis Interactome Mapping Consortium. “Evidence for Network Evolution in an Arabidopsis Interactome Map”. In: *Science* 333 (2011), pp. 601–607. doi: [10.1126/science.1203877](#).
- [A93] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, Jukka-Pekka Onnela, and J. Niels Rosenquist. “Understanding The Demographics Of Twitter Users”. In: *Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media (ICWSM’11)*. Barcelona, Spain, July 2011. doi: [10.1609/icwsm.v5i1.14168](#).
- [A94] Yunkyu Sohn, Myung-Kyu Choi, **Yong-Yeol Ahn**, Junho Lee, and Jaeseung Jeong. “Topological Cluster Analysis Reveals the Systemic Organization of the Caenorhabditis elegans Connectome”. In: *PLOS Computational Biology* 7 (2011), e1001139. doi: [10.1371/journal.pcbi.1001139](#).
- [A95] **Yong-Yeol Ahn**[†], James P. Bagrow[†], and Sune Lehmann[†]. “Link Communities Reveal Multi-scale Complexity in Networks”. In: *Nature* 466 (2010), pp. 761–764. doi: [10.1038/nature09182](#). arXiv: [0903.3178 \[physics.soc-ph\]](#).

- [A96] Sang Hoon Lee, Pan-Jun Kim, **Yong-Yeol Ahn**, and Hawoong Jeong. “Googling social interactions: web search engine based social network construction”. In: *PLOS ONE* 5 (2010), e11233. doi: [10.1371/journal.pone.0011233](https://doi.org/10.1371/journal.pone.0011233). arXiv: [0710.3268](https://arxiv.org/abs/0710.3268) [[physics.soc-ph](#)].
- [A97] Y. Shen, J. Liu, G. Estiu, B. Isin, **Yong-Yeol Ahn**, D.-S. Lee, A.-L. Barabási, V. Kapratl, O. Wiest, and Z. N. Oltvai. “A blueprint for antimicrobial hit discovery targeting metabolic networks”. In: *PNAS* 107 (2010), pp. 1082–1087. doi: [10.1073/pnas.0909181107](https://doi.org/10.1073/pnas.0909181107).
- [A98] Meeyoung Cha, Haewoon Kwak, Pablo Rodriguez, **Yong-Yeol Ahn**, and Sue Moon. “Analyzing the Video Popularity Characteristics of Large-Scale User Generated Content Systems”. In: *ACM/IEEE Transactions on Networking* 17 (2009), pp. 1357–1370. doi: [10.1109/TNET.2008.2011358](https://doi.org/10.1109/TNET.2008.2011358).
- [A99] Hyunwoo Chun, Haewoon Kwak, Young-Ho Eom, **Yong-Yeol Ahn**, Sue Moon, and Hawoong Jeong. “Comparison of online social relations in terms of volume vs. interaction: a case study of cyworld”. In: *Proceedings of ACM Internet Measurement Conference (IMC’08)*. Vouliagmeni, Greece, Oct. 2008. doi: [10.1145/1452520.1452528](https://doi.org/10.1145/1452520.1452528).
- [A100] Filippo Radicchi, **Yong-Yeol Ahn**, and Hildegard Meyer-Ortmanns. “Impact of the updating scheme on stationary states of networks”. In: *J. Phys. A: Math. Theor.* 41 (2008), p. 224010. doi: [10.1088/1751-8113/41/22/224010](https://doi.org/10.1088/1751-8113/41/22/224010).
- [A101] **Yong-Yeol Ahn**, Seungyup Han, Haewoon Kwak, Sue Moon, and Hawoong Jeong. “Analysis of topological characteristics of huge online social networking services”. In: *Proceedings of the 16th International World Wide Web Conference (WWW’07)*. Banff, Alberta, Canada, May 2007. doi: [10.1145/1242572.1242685](https://doi.org/10.1145/1242572.1242685).
- [A102] Meeyoung Cha, Haewoon Kwak, Pablo Rodriguez, **Yong-Yeol Ahn**, and Sue Moon. “I Tube, You Tube, Everybody Tubes: Analyzing the world’s largest user generated content video system”. In: *Proceedings of ACM Internet Measurement Conference (IMC’07)*. San Diego, CA, USA, Oct. 2007. doi: [10.1145/1298306.1298309](https://doi.org/10.1145/1298306.1298309).
- [A103] **Yong-Yeol Ahn**, Beom Jun Kim, and Hawoong Jeong. “Wiring cost in the organization of a biological neuronal network”. In: *Physica A* 367 (2006), pp. 531–537. doi: [10.1016/j.cub.2016.08.053](https://doi.org/10.1016/j.cub.2016.08.053). arXiv:q-bio: [0505009](https://arxiv.org/abs/0505009) (q-bio.NC).
- [A104] **Yong-Yeol Ahn**, Naoki Masuda, Hawoong Jeong, and Jae Dong Noh. “Epidemic dynamics of two species of interacting particles on scale-free networks”. In: *Physical Review E* 74 (2006), p. 066113. doi: [10.1103/PhysRevE.74.066113](https://doi.org/10.1103/PhysRevE.74.066113). arXiv: [0608461](https://arxiv.org/abs/0608461) [[cond-mat.stat-mech](#)].
- [A105] Seungyup Han, **Yong-Yeol Ahn**, Sue Moon, and Hawoong Jeong. “Collaborative blog spam filtering using adaptive percolation search”. In: *Proceedings of the 15th International World Wide Web Conference, workshop on the Weblogging Ecosystem (WWW’06)*. Edinburgh, Scotland, May 2006.
- [A106] Dong-Hee Kim, Seung-Woo Son, **Yong-Yeol Ahn**, Pan-Jun Kim, Young-Ho Eom, and Hawoong Jeong. “Underlying scale-free trees in complex networks”. In: *Progress of Theoretical Physics Supplement* 157 (2005), p. 213. doi: [10.1143/PTPS.157.213](https://doi.org/10.1143/PTPS.157.213).
- [A107] Jae Dong Noh, Hyung-Chai Jeong, **Yong-Yeol Ahn**, and Hawoong Jeong. “Growing network model for community with group structure”. In: *Physical Review E* 71 (2005), p. 036131. doi: [10.1103/PhysRevE.71.036131](https://doi.org/10.1103/PhysRevE.71.036131). arXiv: [0412149](https://arxiv.org/abs/0412149) [[cond-mat.other](#)].
- [A108] Seung-Woo Son, Dong-Hee Kim, **Yong-Yeol Ahn**, and Hawoong Jeong. “Response Network Emerging from Simple Perturbation”. In: *Journal of Korean Physics Society* 44 (2004), p. 628.

Book chapters

- [C1] Pik-Mai Hui, Lilian Weng, Alireza Sahami Shirazi, **Yong-Yeol Ahn**, and Filippo Menczer. “Scalable Detection of Viral Memes from Diffusion Patterns”. In: ed. by Sune Lehmann and **Yong-Yeol Ahn**. Springer, Cham, 2018, pp. 197–211. doi: [10.1007/978-3-319-77332-2_11](https://doi.org/10.1007/978-3-319-77332-2_11).
- [C2] Sune Lehmann and **Yong-Yeol Ahn**. “Spreading in Social Systems: Reflections”. In: ed. by Sune Lehmann and **Yong-Yeol Ahn**. Springer, Cham, 2018, pp. 351–358. doi: [10.1007/978-3-319-77332-2_19](https://doi.org/10.1007/978-3-319-77332-2_19). arXiv: [1801.02236](https://arxiv.org/abs/1801.02236) [physics.soc-ph].
- [C3] Azadeh Nematzadeh, Nathaniel Rodriguez, Alessandro Flammini, and **Yong-Yeol Ahn**. “Optimal Modularity in Complex Contagion”. In: ed. by Sune Lehmann and **Yong-Yeol Ahn**. Springer, Cham, 2018, pp. 97–107. doi: [10.1007/978-3-319-77332-2_6](https://doi.org/10.1007/978-3-319-77332-2_6). arXiv: [1806.00074](https://arxiv.org/abs/1806.00074) [physics.soc-ph].

Patents

- [T1] **Yong-Yeol Ahn**, Lilian Weng, and Filippo Menczer. “Systems and methods to predict meme virality using network structure”. US 10289955B2 (US). May 2019.

Other Works

- [X1] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, Jukka-Pekka Onnela, and J. Niels Rosenquist. *Pulse of the Nation*. 2012 Beijing Design Week. 2012.
- [X2] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, and Chloe Kliman-Silver. *Tweets mentioning “earthquake” immediately following Virginia earthquake on 08/23/2011*. http://www.youtube.com/watch?v=XJ1EQbmJ_LQ. 2011.
- [X3] **Yong-Yeol Ahn**, Sebastian E. Ahnert, James P. Bagrow, and Albert-László Barabási. *Flavor Network*. Edge-Serpentine Gallery exhibition, “Maps for the 21st Century”, <http://www.edge.org/documents/Edge-Serpentine-MapsGallery/>. 2010.
- [X4] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, Jukka-Pekka Onnela, and J. Niels Rosenquist. *Mapping the Conversation: Political Topics and Geography on Twitter*. <http://election.ccs.neu.edu>. 2010.
- [X5] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, Jukka-Pekka Onnela, and J. Niels Rosenquist. *Pulse of the Nation*. Foosaner Art Museum, “The Art of Networks”, <http://isabelmeirelles.com/exhibit-the-art-of-networks/>. 2010.
- [X6] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, Jukka-Pekka Onnela, and J. Niels Rosenquist. *Pulse of the Nation: US mood throughout the day inferred from Twitter*. <http://www.ccs.neu.edu/home/amislove/twittermood/>. 2010.
- [X7] **Yong-Yeol Ahn**, James P. Bagrow, Sune Lehmann, and Alec Pawling. *Twittermood: United States Map of Mood*. <http://twittermood.net>. 2009.

SELECTED TALKS

Invited conference talks and lectures

- Keynote at NetSci 2026 06/03/2026
- Keynote at CIKM (Seoul, South Korea) 11/13/2025
- ICSSI Plenary talk (Washington DC, USA) 07/01/2024
- 24 Hour Macroscopes Vision for the (AI) Future Panel 12/10/2023
- ICSSI’23 Method Panel (Evanston, IL) 06/27/2023
- SFI Workshop on Interacting Contagions (Santa Fe, NM) 04/20/2023
- The Science of Team Science and Innovation Workshop (NetSci 2022 satellite) 07/16/2022
- A flash workshop on Science of Science at APCTP (Pohang, South Korea) 06/01/2022
- SFI Workshop “A New Synthesis for the Science of Science” (Santa Fe, NM) 05/04/2022
- Multiplex Brain Networks Workshop (Banff, Canada) 04/23/2022
- Keynote at IC2S2 2021 (Zurich, Switzerland) 07/31/2021

• Complex Networks in Economics and Innovation (Networks 2021 satellite)	06/30/2021
• CADRE Workshop (Networks 2021 satellite)	06/23/2021
• Summer Institute in Computational Social Science (Beijing, China)	06/21/2021
• Quantifying Success Satellite at NetSci 2020 (Rome, Italy)	09/17/2020
• Net-COVID: Understanding and Exploring Network Epidemiology in the Time of Coronavirus (U. Maryland)	04/16/2020
• Korean Society of Food Science and Nutrition (Jeju, South Korea)	10/23/2019
• UVM PhD Research Day (Burlington, VT)	09/06/2019
• EAR Learning: Machines, Brains & Children workshop (Bloomington, IN)	05/18/2019
• International Workshop on Function, Information Spreading, and Percolation in Brain Networks (Pohang, South Korea)	05/13/2019
• Workshop & International Symposium on Complexity Science Approaches to Brain Dynamics (Calgary, Canada)	10/02/2018
• American Mathematical Society meeting Special Session on Network Theory (Bloomington, IN)	04/01/2017
• Data Science meets Social Science, Indiana University (Bloomington, IN)	11/03/2016
• ACM 10th Intl. Workshop on Data and Text Mining in Biomedical Informatics (DTMBIO) 2016 (Indianapolis, IN)	10/28/2016
• International Workshop on Science and Culture (Seoul, South Korea)	06/04/2016
• NetSci 2016 (Seoul, South Korea)	06/03/2016
• Network of Networks (NetoNets) Satellite at NetSci 2016 (Seoul, South Korea)	05/30/2016
• Social Connectome Satellite at NetSci 2016 (Seoul, South Korea)	05/30/2016
• Higher Order Models in Network Science (HONS) Satellite at NetSci 2016 (Seoul, South Korea)	05/30/2016
• Mathematical Analysis of Cultural Expressive Forms: Text Data, IPAM Cultural Analytics Long Program	05/23/2016
• Culture Analytics Beyond Text: Image, Music, Video, Interactivity and Performance, IPAM Cultural Analytics Long Program	03/23/2016
• Information & Library Science Doctoral Symposium, IU	10/25/2014
• Computational Gastronomy—Food in the Age of Data (The Royal Society Workshop, Chicheley, UK; co-organizer)	09/29/2014
• ChASM 2014: Computational Approaches to Social Modeling (WebSci 2014 workshop, Bloomington, IN)	06/23/2014
• COVENANT 2013: Collective Behaviors and Networks (a satellite event of ECCS, Barcelona, Spain)	09/19/2013
• Quantifying Success (a satellite event of ECCS, Barcelona, Spain)	09/18/2013
• UKC2013 (East Rutherford, NJ)	08/07/2013
• International Workshop on Social Computing 2013 (Seoul, South Korea)	07/27/2013
• Workshop on Time-Dependent and Multiplex Networks (University of Oxford, United Kingdom)	07/08/2013
• Wolfram Data Summit 2012 (Washington, DC)	09/07/2012
• Arts, Humanities, and Complex Networks (Leonardo satellite symposium at NetSci2012, Evanston, IL)	06/19/2012
• Cambridge Networks Day 2012 (University of Cambridge, United Kingdom)	05/18/2012
• Gastronomy & Technology Days 2011 (Telefonica, Barcelona, Spain)	10/18/2011
• 2011 Summer School on Social Network Analysis (NIMS, Daejeon, South Korea)	08/06/2011
• Using online social networks research to improve health	

(Columbia University, New York, NY)	05/23/2011
• 5th APCTP-KIAS Winter School on Statistical Physics (Phoenix park, South Korea)	01/28/2008

Invited Colloquia and Seminars (†: postponed or canceled due to COVID-19 pandemic)

• Critical Technology Initiative, Carnegie Mellon University	02/26/2026
• K-DS Distinguished Lecture Series, South Korea	11/21/2025
• Information Sciences and Technology Department, George Mason University	10/29/2025
• Graduate School of Business, Stanford University	10/15/2025
• Weatherhead School of Management, Case Western Reserve University	03/26/2025
• Kelley School of Business, Indiana University	05/22/2024
• School of Data Science, University of Virginia	05/16/2024
• School of Information, University of Michigan	09/22/2023
• University of Exeter	03/24/2023
• Network Science Institute, Northeastern University	02/23/2023
• MIT Media Lab	02/22/2023
• NICO, Northwestern University	02/15/2023
• Carnegie Mellon University	01/19/2023
• University of Pittsburgh	01/18/2023
• Databricks	11/17/2022
• Center for the Study of Complex Systems, University of Michigan	11/15/2022
• IUNI Colloquium, Indiana University	10/28/2022
• STRUDEL group, CMU	04/19/2022
• Data Visualization Bazaar, Indiana University	04/05/2022
• NeuroTech, UIUC	10/28/2021
• PittCSS, University of Pittsburgh	10/22/2021
• Department of Physics, University of Florida	10/14/2021
• IBS Data Science Group, South Korea	08/16/2021
• Socar, South Korea	06/29/2021
• Tobacco Control and Wellness Research Working Group, Indiana University	01/29/2021
• CUDAN, Tallinn University, Estonia	11/30/2020
• AiFrenz, South Korea	05/13/2020
• †Engineering Sciences & Applied Mathematics, Northwestern University	04/13/2020
• NICO, Northwestern University	12/03/2019
• Department of Communication Studies, Northwestern University	12/02/2019
• Product and Sustainability Analytics, Ford Motor Company	07/09/2019
• KISTI, South Korea	07/01/2019
• Department of Public Administration, Korea University, South Korea	07/01/2019
• KIST, South Korea	06/27/2019
• Coordinated Science Lab, UIUC, IL	11/26/2018
• Department of Physics and Astronomy, University of Calgary, Canada	09/28/2018
• IU Food Institute	11/30/2017
• Bloomington Rotary Club	03/01/2016
• School of Medicine, Indiana University, IN	11/30/2015
• USC Information Sciences Institute, CA	11/04/2015
• Information and Library Science Colloquium, Indiana University, IN	03/06/2015
• Computer Science Colloquium, Indiana University, IN	11/14/2014
• Department of Biology Colloquium, Write State University, OH	10/20/2014
• University of Oxford, UK	10/02/2014
• LinkedIn	08/19/2014
• Facebook	06/06/2014
• Department of Physics, SNU, South Korea	05/19/2014

• Department of Computer Science, KAIST, South Korea	05/16/2014
• POSTECH, South Korea	05/15/2014
• KIAS, South Korea	05/14/2014
• Technology Management, Economics and Policy Program, SNU, South Korea	05/13/2014
• Sungkyunkwan University, South Korea	05/13/2014
• School of Culture Technology, KAIST, South Korea	05/12/2014
• Data Science Seminar, University of Washington, WA	03/19/2014
• Network Science Talks series, Indiana University, IN	10/28/2013
• DIMACS, Rutgers University, NJ	03/04/2013
• Department of Computer & Information Science, IUPUI, IN	01/11/2013
• Wolfram Research, IL	10/25/2012
• Department of Statistics Colloquium, IUB, IN	09/24/2012
• Computer Science & Engineering, University of Washington, WA	07/19/2012
• IBM Watson Research Center, NY	06/15/2012
• Center for Social Data, DTU, Denmark	05/24/2012
• School of Informatics Colloquium, IUPUI, IN	03/09/2012
• Department of Physics Colloquium, Ohio State University, OH	01/03/2012
• Dept. of Computer Science, KAIST, South Korea	07/18/2011
• BECS, Aalto University, Finland	05/09/2011
• Dept. of Physics, University of Notre Dame, IN	03/10/2011
• School of Informatics and Computing, IUB, IN	03/03/2011
• Dept. of Brain and Cognitive Science, SNU, South Korea	11/26/2010
• Dept. of Computer Science, UMASS Boston, MA	10/14/2010
• SCANS seminar series, CCIS, Northeastern University, MA	10/05/2010
• APCTP, Pohang, South Korea	07/20/2010
• Dept. of Industrial & Systems Engineering, KAIST, South Korea	07/23/2010
• Dept. of Computer Science, KAIST, South Korea	07/09/2010

SERVICE

Editorial services

• Associate Editor, <i>Science Advances</i>	2025–present
• Editorial Board Member, <i>PeerJ Computer Science</i>	2024–present
• Advisory Board Member, <i>Human Computation</i> (Journal)	2014–present
• Academic Editor, <i>PLOS ONE</i>	2018–2024
• Associate Editor, <i>Frontiers in Big Data</i>	2021–2022
• Academic Editor for the special issue “Science of Stories”, <i>PLOS ONE</i>	2018–2019
• Editor (with Sune Lehmann), <i>Complex Spreading Phenomena in Social Systems</i> , Springer	2018
• Editor (with Emma Spiro), <i>Proceedings of 8th International Conference on Social Informatics</i> Volume I & II	2016

Organization

• Scientific Committee, <i>ISSI 2023</i> (Bloomington, IN).	07/2023
• Publicity Chair, <i>ICSSI2022</i> (Washington DC).	06/2022
• Program Co-chair, <i>NetSci 2017</i> (Indianapolis, IN).	06/2017
• Program Co-chair, <i>SocInfo 2016</i> (Bellevue, WA).	11/2016
• Co-organizer, <i>COOL2014 (Connecting Online & Offline Life)</i> , a WWW’14 workshop (Seoul, South Korea).	04/2013
• Co-organizer, <i>Computational Gastronomy: Food in the Age of Data</i> , a Royal Society International Scientific Seminar (Buckinghamshire, UK).	09/2014

Committees

- Member, Standing Committee on Advancing Science Communication, National Academies, USA.

Reviewer

- Academic Program Review: Department of Computational and Data Sciences (George Mason University), 2026.
- Academic Program Review: Complex Systems and Data Science program (University of Vermont), 2025.
- Funding (US): NSF, NIH, John Templeton Foundation, Harris Faculty Fellowship (Grinnell College)
- Funding (International): Irish Research Council (Ireland), Royal Society Te Apārangi (New Zealand), Fondazione Cariplo (Italy)
- General: *Nature*, *Science*, *PNAS*, *Nature Communications*, *Science Advances*, *Nature Machine Intelligence*, *Nature Human Behaviors*, *Royal Society Open Science*, *EPJ Data Science*, *Scientific Reports*, *PLoS ONE*
- Mathematics, Physics, Network Science: *Physical Review Letters*, *Nature Physics*, *Physical Review X*, *Communications Physics*, *EPL*, *Physics Letters A*, *NPJ Complexity*, *JSTAT*, *Physical Review E*, *Physica A*, *European Physical Journal B*, *European Journal of Applied Mathematics*, *Network Science*, *Applied Network Science*
- Biology: *PLoS Computational Biology*, *BMC Systems Biology*, *IET Systems Biology*
- Medicine: *Journal of Obesity*
- Computer Science: *WWW'09*, *SIGKDD'10*, *ACM Transactions on Intelligent Systems and Technology*, *ACM Transactions on Knowledge Discovery from Data*
- Science of Science: *Quantitative Science Studies*
- Others: *Perspectives on Psychological Science*, *Journal of Computational Social Science*, *Journal of Computer-Mediated Communication*, *Palgrave Communications*, *Journal of Obesity*, *Leonardo*

PC member

- IC2S2 2015, 2017, 2023–2025
- NERCCS 2020, 2025
- ICLR 2024
- ACL 2024
- ICWSM 2014–2018, 2024
- Cultural Data Analytics Conference 2023
- ISSI 2023
- ICSSI 2022
- NetSci 2015, 2018, 2020, 2022
- The Web Conference (WWW; Senior PC in 2021) 2012–2017, 2021
- WSDM (Outstanding Reviewer Award) 2021
- ICWSM NECO workshop 2018, 2020
- CompleNet 2010, 2012–2016, 2019
- DTMBIO 2017
- CCS 2017
- ASONAM 2015
- GLBIO 2015
- SocInfo (Best Reviewer Finalist in 2014) 2014, 2015
- ECCS Computational Social Science workshop 2014
- WebSci 2014
- WWW SIMPLEX workshop 2013
- ECCS COVENANT workshop 2013

University and Departmental services

- Member, School P&T Committee, School of Data Science, UVA 2025–current
- Co-chair, Colloquium Committee, School of Data Science, UVA 2025–current

• (Moved to University of Virginia)	2025
• Judge, IU Women's Research Poster Competition	2022–2025
• Promotion and Tenure Committee	2024–2025
• Social, Behavioral, and Brain Health Project Development Team	2024–2025
• Climate Action Plan Implementation Committee	2024–2025
• Online learning committee	2023–2025
• Co-chair, IU Transportation Working Group	2023–2025
• Transportation Policy and Safety Committee	2022–2025
• Promotion Committee	2023–2024
• Chair, Expedited Tenure/Promotion Committee	2023
• Luddy Fellow Selection Committee	2023
• Informatics Executive committee	2022–2023
• Third-year review committee, Statistics	2023
• AI certificate task force	2021–2023
• Hiring committee (AI & Networks)	2021–2022
• Chair, Tenure Committee, Informatics	2021–2022
• Indiana AI Week Organization committee	2021
• (Sabbatical)	2020–2021
• Director of Undergraduate Studies, Informatics	2019–2020
• Chair, Informatics colloquium committee	2018–2019
• Artificial Intelligence Task Force	2019
• Hiring committee (Emerging Areas Research: Learning: Brains, Machines, and Children) 2018–2019	
• School policy committee, School of Informatics, Computing, and Engineering	2016–2019
• Informatics colloquium committee	2013–2018
• Co-chair, Data Science Structure Task Force	2017
• Bloomington Faculty Council (SoIC representative)	2015–2017
• Technology Policies Committee	2015–2016
• Hiring Committee (Complex Systems)	2014–2015
• Indiana Clinical and Translational Sciences Institute (CTSI), Health & Network Project Development Team	2012–2015
• School website committee	2013–2014
• Hiring Committee (Data Science)	2013–2014
• Undergraduate lecturer and advisor hiring committee	2013
• Hiring committee (Complex Systems)	2012–2013
• SOIC-SLIS merger retreat planning committee	2012

Community services

• Member, Citizen Transportation Advisory Committee, Charlottesville	2025–current
--	--------------