

Yong-Yeol Ahn

CONTACT INFORMATION

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HIGHLIGHTS

Selected Honors

- Kavli Fellow, 2015.
- LinkedIn Economic Graph Challenge winner, 2015.
- Microsoft Research Faculty Fellowship, 2014: one of the seven fellows across world.
- AKPA Outstanding Young Researcher Award, 2012: one of the two Korean awardees.

Computational social science and biology

- Community structure: *Nature*, 2010; *Science*, 2011.
- Online social networks: *IMC'07* (Best paper); *WWW'07*; *IMC'08*.
- Social media: *The Pulse of the Nation* (covered by major news media); *ICWSM'11*.
- Information diffusion and viral memes: *Sci. Rep.*, 2013 and *ICWSM'14* (covered by *Scientific American* and *IEEE Spectrum*); *PRL*, 2014 (featured in Editors' suggestion).

Cultural science

- Computational gastronomy: *Sci. Rep.*, 2011 (the most downloaded paper in all *Nature* journals in Dec. 2011; covered by *Nature News*, *Scientific American*, etc.); *PLoS ONE*, 2013 (covered by *Wired* and MIT tech review blogs)
- Computational history: *Science*, 2014 (a video produce by *Nature* has attracted about one million views; NSF Vizzies challenge finalist).

ACADEMIC POSITIONS

Indiana University, Bloomington, IN, USA

Associate Professor, Department of Informatics	July 2018 – present
Adjunct Professor, Department of Statistics	June 2014 – present
Assistant Professor, Department of Informatics	Oct 2011 – June 2018

Northeastern University, Boston, MA, USA

Post-doctoral research associate	June 2008 – May 2011
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Dana-Farber Cancer Institute, Harvard University, Boston, MA, USA

Visiting Researcher	June 2008 – May 2011
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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

INDUSTRIAL POSITIONS

Janys analytics

Co-founder & Data scientist	May 2011 – present
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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

I422/I590 Data Visualization (Residential & Online)	Fall 2018
I422/I590 Data Visualization (Online)	Summer 2018
I606 Network Science (Residential & Online)	Spring 2018
I422/I590 Data Visualization (Residential & Online)	Fall 2017
I590 Network Science (Online)	Summer 2017
I590 Network Science (Online)	Spring 2017
I422/I590 Data Visualization	Fall 2016
I590 Network Science (Online)	Fall 2016
I422/I590 Data Visualization	Fall 2015
I709 Complex Systems Seminar II	Spring 2015
H400/I400/I590 Data Visualization	Fall 2014
I590 Complex Networks and Their Applications	Spring 2014
H400/I400/I590 Data Visualization	Fall 2013
I709 Complex Systems Seminar II	Spring 2013
I211 Information Infrastructure II	Fall 2012
H400/I400/I590 Visual Analytics	Spring 2012
I590 Complex Networks and Their Applications	Spring 2012

Teaching Assistant, KAIST

Computational Physics	Fall 2003
Classical Mechanics	Spring 2003
General Physics II	Fall 2002
General Physics I	Spring 2002

ADVISING

Post-doctoral researchers

Shirin Nilizadeh (co-mentored with Prof. Apu Kapadia)	2014–2015
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Ph.D. students

Wanying Zhao	2018–
Patrick Kaminski	2018–
Yizhi Jing	2015–
Jaehyuk Park	2015–
Nathaniel Rodriguez	2013–
Qing Ke	2013–2018

Ph.D. research committees

Nathaniel Rodriguez, Ian Wood, Pablo Moriano, and Yeonjoon Lee	current
Qing Ke and 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. thesis review	
Milli Letizia, Università degli Studi di Pisa	2018
Michele Coscia, Università degli Studi di Pisa	2012
M.S. and post-undergraduate students	
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	
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	
Chloe Kilman-Silver (Winsor School, co-mentored with Alan Mislove and Sune Lehmann)	2011

SELECTED HONORS

Conference

- Best paper award, 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

- ICTS fellow, Jacobs University 2007
- Scholarship from DAAD (Germany) and KOSEF (Korea), 2006

GRANTS, AWARDS, AND FELLOWSHIPS

List of grants and awards

- PI, DoD MINERVA initiative, Science Genome: A Scholarly Graph Embedding Framework to Uncover the Fundamental Dynamics of Scientific Enterprise, recommended for funding.
- Co-PI (PI: Emilio Ferrara), DARPA, 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, 08/2016–06/2020.
- 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

PUBLICATIONS

Books

- [B1] Sune Lehmann and **Yong-Yeol Ahn**, eds. *Complex Spreading Phenomena in Social Systems*. Springer, Cham, 2018.

Articles (†: equal contribution)

- [A1] Cassidy R. Sugimoto, **Yong-Yeol Ahn**, Elise Smith, Benoit Macaluso, and Vincent Larivière. “Factors affecting sex reporting in medical research”. In: *Lancet (in press)* (2019).
- [A2] Jisun An, Haewoon Kwak, and **Yong-Yeol Ahn**. “A systematic media frame analysis of 1.5 million news articles from 2000 to 2017”. In: *Under review* (2018).
- [A3] 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. arXiv: 1806.05521 [cs.CL].
- [A4] Alexander J. Gates, Ian B. Wood, William P. Hetrick, and **Yong-Yeol Ahn**. “On comparing clusterings: an element-centric framework unifies overlaps and hierarchy”. In: *Under review* (2018). arXiv: 1706.06136 [stat.ML].
- [A5] 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 (in press)* (2018).
- [A6] Elise Jing, Simon DeDeo, and **Yong-Yeol Ahn**. “Sameness attracts, novelty disturbs, but outliers flourish in fanfiction online”. In: *Under review* (2018).
- [A7] Pablo Moriano, Jorge Finke, and **Yong-Yeol Ahn**. “Community-based event detection in temporal networks”. In: *Under review* (2018).
- [A8] 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: *Under review* (2018). arXiv: 1610.06497 [cs.SI].
- [A9] Jaheyuk Park[†], Ian Wood[†], Elise Jing, Azadeh Nematzadeh, Souvik Ghosh, Michael Conover, and **Yong-Yeol Ahn**. “Labor flow network reveals the hierarchical structure of geo-industrial clusters in the global economy”. In: *Under review* (2018).
- [A10] Nathaniel Rodriguez, Eduardo Izquierdo, and **Yong-Yeol Ahn**. “Optimal modularity and memory capacity of neural networks”. In: *Under review* (2018). arXiv: 1706.06511 [cs.NE].
- [A11] 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 [stat.ML].
- [A12] 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. arXiv: 1608.06229 [cs.DL].

- [A13] 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. arXiv: 1706.08609 [cs.CL].
- [A14] 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. arXiv: 1601.05100 [physics.soc-ph].
- [A15] 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.
- [A16] 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.
- [A17] 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. arXiv: 1611.06459 [cs.SI].
- [A18] Yu-Xiao Zhu, Wei Wang, Min Tang, and **Yong-Yeol Ahn**. “Social contagions on weighted networks”. In: *Physical Review E* 96 (2017), p. 012306. arXiv: 1604.00467 [physics.soc-ph].
- [A19] Arram Bae, Doheum Park, **Yong-Yeol Ahn**, and Juyong Park. “The Multi-Scale Network Landscape of Collaboration”. In: *PLoS ONE* 11.3 (2016), e0151784.
- [A20] Arram Bae, Doheum Park, Juyong Park, and **Yong-Yeol Ahn**. “Network Landscape of Western Classical Music”. In: *Leonardo* 49.5 (2016), p. 448.
- [A21] 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.
- [A22] Nathaniel Rodriguez, Johan Bollen, and **Yong-Yeol Ahn**. “Collective Dynamics of Belief Evolution under Cognitive Coherence and Social Conformity”. In: *PLoS ONE* 11.11 (2016), e0165910. arXiv: 1509.01502 [physics.soc-ph].
- [A23] James P. Bagrow, Sune Lehmann, and **Yong-Yeol Ahn**. “Robustness and Modular Structure in Networks”. In: *Network Science* 3 (2015), pp. 509–525.
- [A24] 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.
- [A25] Huina Mao, Xin Shuai, **Yong-Yeol Ahn**, and Johan Bollen. “Quantifying socioeconomic indicators in developing countries from mobile phone communication data: applications to Côte D’Ivoire”. In: *EPJ Data Science* 4.1 (2015), pp. 1–16.

- [A26] Bratislav Mišić, Richard F. Betzel, Azadeh Nematzadeh, Joaquin Goñi, Alessandra Griffa, 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.
- [A27] 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.
- [A28] 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.
- [A29] **Yong-Yeol Ahn**, Deok-Sun Lee, Henry Burd, William Blank, and Vinayak Kap-
atral. “Metabolic Network Analysis-Based Identification of Antimicrobial Drug
Targets in Category A Bioterrorism Agents”. In: *PLOS ONE* 9 (2014), e85195.
- [A30] Qing Ke and **Yong-Yeol Ahn**. “Tie Strength Distribution in Scientific Collabo-
ration Networks”. In: *Physical Review E* 90 (2014), p. 032804.
- [A31] Azadeh Nematzadeh, Emilio Ferrara, Alessandro Flammini, and **Yong-Yeol
Ahn**. “Optimal Network Modularity for Information Diffusion”. In: *Physical
Review Letters* 113 (2014), p. 088701.
- [A32] 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.
- [A33] 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.
- [A34] Lilian Weng, Filippo Menczer, and **Yong-Yeol Ahn**. “Predicting Successful Memes
using Network and Community Structure”. In: *Proceedings of the Eighth Interna-
tional AAAI Conference on Weblogs and Social Media (ICWSM’14)*. Ann Arbor, MI,
USA, June 2014.
- [A35] **Yong-Yeol Ahn** and Sebastian E. Ahnert. “The Flavor Network”. In: *Leonardo* 46
(2013), pp. 272–273.
- [A36] Huina Mao, Xin Shuai, **Yong-Yeol Ahn**, and Johan Bollen. “Mobile communi-
cations 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)*. Cam-
bridge, MA, USA, May 2013.
- [A37] Lilian Weng, Filippo Menczer, and **Yong-Yeol Ahn**. “Virality Prediction and
Community Structure in Social Networks”. In: *Scientific Reports* 3 (2013), p. 2522.
- [A38] Zhong-Yuan Zhang, Yong Wang, and **Yong-Yeol Ahn**. “Overlapping Commu-
nity Detection in Complex Networks using Symmetric Binary Matrix Factoriza-
tion”. In: *Physical Review E* 87 (2013), p. 062803.
- [A39] 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.
- [A40] Meeyoung Cha, Fabricio Benevenuto, **Yong-Yeol Ahn**, and Krishna P. Gum-
madi. “Delayed Information Cascades in Flickr: Measurement, Analysis, and
Modeling”. In: *Computer Networks* 56 (2012), pp. 1066–1076.

- [A41] **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.
- [A42] Arabidopsis Interactome Mapping Consortium. “Evidence for Network Evolution in an Arabidopsis Interactome Map”. In: *Science* 333 (2011), pp. 601–607.
- [A43] 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.
- [A44] 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.
- [A45] **Yong-Yeol Ahn**[†], James P. Bagrow[†], and Sune Lehmann[†]. “Link Communities Reveal Multi-scale Complexity in Networks”. In: *Nature* 466 (2010), pp. 761–764.
- [A46] 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.
- [A47] Y. Shen, J. Liu, G. Estiu, B. Isin, **Yong-Yeol Ahn**, D.-S. Lee, A.-L. Barabási, V. Kapral, O. Wiest, and Z. N. Oltvai. “A blueprint for antimicrobial hit discovery targeting metabolic networks”. In: *PNAS* 107 (2010), pp. 1082–1087.
- [A48] 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.
- [A49] 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.
- [A50] 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.
- [A51] **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.
- [A52] 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.
- [A53] **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.
- [A54] **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.

- [A55] 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.
- [A56] 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.
- [A57] 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.
- [A58] 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.
- [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.
- [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.

Patents

- [P1] **Yong-Yeol Ahn**, Azadeh Nematzadeh, Ian Wood, Jaehyuk Park, Yizhi Jing, and Michael Conover. “Data Flow Based Feature Vector Clustering”. US 15/229,956 (Pending).
- [P2] **Yong-Yeol Ahn**, Lilian Weng, and Filippo Menczer. “Systems and methods to predict meme virality using network structure”. US 61/783,615 (Pending).
- [P3] Alan Mislove, **Yong-Yeol Ahn**, Alexander E. Dusenbury, and Sune Lehmann. “Integrated system for sentiment in social data streams”. US 61/798,726 (Pending).

Other Works

- [O1] Alan Mislove, Sune Lehmann, **Yong-Yeol Ahn**, Jukka-Pekka Onnela, and J. Niels Rosenquist. *Pulse of the Nation*. 2012 Beijing Design Week. 2012.
- [O2] 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.
- [O3] **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.
- [O4] 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.

- [O5] 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.
- [O6] 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.
- [O7] **Yong-Yeol Ahn**, James P. Bagrow, Sune Lehmann, and Alec Pawling. *Twitter-mood: United States Map of Mood*. <http://twittermood.net>. 2009.

SELECTED TALKS

Invited conference talks and lectures

- 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

- 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

Editorial services

- Academic Editor for the special issue “Science of Stories”, PLOS ONE (2018–2019)
- Academic Editor, PLOS ONE (2018–present)
- Advisory Board Member, Human Computation (Journal, 2014–present).
- Editor (with Sune Lehmann), *Complex Spreading Phenomena in Social Systems*, Springer (2018).
- Editor (with Emma Spiro), *Proceedings of 8th International Conference on Social Informatics Volume I & II* (2016).

Organization

- Program Co-chair, *NetSci 2017* (International School and Conference on Network Science, Indianapolis, IN). 06/2017
- Program Co-chair, *SocInfo 2016* (8th International Conference on Social Informatics, Bellevue, WA). 11/2016
- Co-organizer, *COOL2014* (Connecting Online & Offline Life), a WWW’14 workshop (Seoul, South Korea). 04/2013
- Co-organizer, *Computational Gastronomy: Food in the Age of Data*, a Royal Society International Scientific Seminar (Buckinghamshire, UK). 09/2014

Reviewer

- Funding: NSF, NIH NCI, Irish Research Council
- General: Science, PNAS, Science Advances, Scientific Reports, PLoS ONE, Network Science
- Mathematics and Physics: Physical Review Letters, Nature Physics, Physical Review X, EPL, Physics Letters A, Physical Review E, Physica A, European Physical Journal B, European Journal of Applied Mathematics
- 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
- Other: Journal of Computational Social Science, Journal of Computer-Mediated Communication, Palgrave Communications, Journal of Obesity, Leonardo

PC member

- CompleNet: 2010, 2012–2016, 2019
- ICWSM NECO workshop: 2018
- NetSci: 2015, 2018
- DTMBIO: 2017
- ICWSM: 2014–2018 (Senior PC).
- CCS: 2017
- WWW: 2012–2017.
- IC2S2: 2015, 2017.
- ASONAM: 2015.
- GLBIO: 2015.
- SocInfo: 2014 (Best Reviewer Finalist), 2015.
- ECCS Computational Social Science workshop: 2014.
- WebSci: 2014.
- WWW SIMPLEX workshop: 2013.
- ECCS COVENANT workshop: 2013.

University and Departmental services

- Chair, Informatics colloquium committee, 2018–

- Hiring committee (Machine Learning, 2018–2019)
- School policy committee, School of Informatics, Computing, and Engineering, 2016–
- 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): participating in a committee that reviews CTSI seed grants and mentors team building and project development.
- School website committee (2013–2014): planned and launched new website for the new school (SOIC+SLIS)
- 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): planned and organized the retreat for discussing SOIC-SLIS merger.

IN THE PRESS

Selected list of media coverages

- “Gendered Conversation in a Social Game-Streaming Platform” was covered in several news articles and blogs. A more comprehensive list is [here](#).
 - *Motherboard* (11/23, 2016).
 - *Kotaku* (11/23, 2016).
- “NIH ‘Doctor shopping’ project”
 - *Fox 59* (10/26, 2016).
 - *IU Bloomington Newsroom* (10/19, 2016).
- “LinkedIn Economic Graph Challenge 2015”
 - *IU Inc.* (May 15th, 2015).
 - *SoIC News* (May 14th, 2015)
- “A Network Framework of Cultural History” (*Science* 345, 558, 2014).
 - *Nature News* (July 31st, 2014). Among the top 4 most viewed videos from *Nature Video*, with about 900,000 views.
 - *The Economist*(July 31st, 2014).
 - *The Boston Globe* (July 31st, 2014).
 - *National Geographic* (July 31st, 2014).
 - *NPR Goats and Soda* (August 1st, 2014).
 - *Dong-A Science* (July 31st, 2014).
- “Geography and Similarity of Regional Cuisines in China” (*PLoS ONE* 8, e79161, 2013).
 - *MIT Technology Review* (July 25th, 2013).
 - *Wired Science* blog ‘Social Dimension’ (July 24th, 2013).
- “Virality Prediction and Community Structure in Social Networks” (*Scientific Reports* 3, 2522, 2013).

- *IEEE Spectrum* (March 27th, 2014).
- *Scientific American* (December 17th, 2013).
- “Flavor network and the principles of food pairing” (*Scientific Reports* **1**, 196, 2011). More comprehensive list can be found *here*.
 - *Nature News* (December 15th, 2011).
 - *The Huffington Post* (December 15th, 2011).
 - *Mail Online* (December 19th, 2011).
 - *InsideScience.org* (December 23rd, 2011).
 - *Physorg.com* (December 26th, 2011).
 - *Technology Review, The Physics arXiv Blog* (November 29th, 2011).
 - *Gizmodo* (December 18th, 2011).
 - *NPR, the salt* (December 21st, 2011).
 - *Flowing Data* (December 27th, 2011).
 - *IU News* (December 15th, 2011).
 - *Northeastern News* (December 16th, 2011).
- “Pulse of the nation: U.S. Mood Throughout the Day inferred from Twitter” was covered in several television programs, newspapers, and blogs. A more comprehensive list can be found *here*. Some highlights are following:
 - *CBS Evening News with Katie Couric* (July 23rd, *video, transcript*).
 - *Fox News* (July 28th, 2010, *video*).
 - *CBS 3* (August 2nd, 2010, *video*).
 - *New York Times* (July 24th, 2010).
 - *New York Times, VentureBeat* (July 23rd, 2010).
 - *New York Times, Bits* (July 22nd, 2010).
 - *BBC* (July 23rd, 2010).
 - *Time Magazine* (July 22nd, 2010).
 - *Vanity Fair* (July 22nd, 2010).
 - *New York Magazine* (July 22nd 2010).
 - *LA Times* (July 23rd, 2010).
 - *Wall Street Journal* (July 24th, 2010).
 - *USA Today* (July 28th, 2010).
 - *SF Gate/San Francisco Chronicle* (July 21st, 2010).
 - *CBS News* (July 22nd, 2010).
 - *National Public Radio* (July 23rd, 2010). *all tech considered*.
 - *National Public Radio* (July 22nd, 2010). [*The Picture Show*]
 - *Mashable* (July 21st, 2010).
 - *Huffington Post* (July 23rd, 2010).
 - *CNET* (July 22nd, 2010).
 - *Gawker* (July 22nd, 2010).
 - *Engadget* (July 27th, 2010).
 - *CNN* (August 6th, 2010).
- “Link communities reveal multiscale complexity in networks” (*Nature* **466**, 761, 2010) was featured on *Northeastern News* and *Science On (Hankyoreh)*.
- “Googling social interactions: Web search engine based social network construction” (*PLoS One* **5**, e11233, 2010) was featured on *New Scientist* and *Pocket Science*.