

YONG-YEOL AHN

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RESEARCH INTERESTS	Hierarchy and modular structure in complex networks; Online social networks and Social media; Evolution and optimized structure of living organisms; Relationship between structure and dynamics in complex networks; Robustness of networks; Epidemic dynamics on complex networks	
EDUCATION	KAIST , Daejeon, South Korea Ph.D., Physics, February 2008 <ul style="list-style-type: none">• Thesis topic: Organizing Principles and Dynamics of Complex Networks• Advisor: Professor Hawoong Jeong M.S., Physics, February 2003 <ul style="list-style-type: none">• Advisor: Professor Hawoong Jeong B.S., Physics, February 2001	
ACADEMIC EXPERIENCE	Northeastern University , Boston, MA USA Post-doctoral research associate	June 2008 to present
	Dana-Farber Cancer Institute, Harvard University , Boston, MA USA Visiting Researcher	June 2008 to present
	Jacobs University , Bremen, Germany ICTS fellow Visiting Researcher	March 2007 to April 2007 July 2006 to August 2006
	KAIST , Daejeon, South Korea Postdoctoral Research Associate Research Assistant Teaching Assistant	February 2008 to May 2008 March 2003 to January 2008 March 2002 to February 2003
SELECTED HONORS & AWARDS	Conference <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Scholarship from DAAD (Germany) and KOSEF (Korea), 2006 Etc <ul style="list-style-type: none">• Grand prize, The 1st KOBIC Bioinformatics Contents Contest, 2007	

PUBLICATIONS
(IN PREPARATION)

- [1] **Y.-Y. Ahn***, S. Ahnert*, J. P. Bagrow, and A.-L. Barabási. Flavor network and the principles of food pairing.
- [2] **Y.-Y. Ahn**, S. Lehmann, and J. P. Bagrow. Robustness of modular network and overlapping communities.
- [3] J. P. Bagrow, S. Lehmann, and **Y.-Y. Ahn**. Empirical validation of community detection.

PUBLICATIONS
(JOURNALS)

- [1] **Y.-Y. Ahn***, J. P. Bagrow*, and S. Lehmann*. Link communities reveal multi-scale complexity in networks. *Nature*, 466:761, 2010.
- [2] S. H. Lee, P.-J. Kim, **Y.-Y. Ahn**, and H. Jeong. Googling social interactions: web search engine based social network construction. *PLoS One*, 5:e11233, 2010.
- [3] Y. Shen, J. Liu, G. Estiu, B. Isin, **Y.-Y. Ahn**, D.-S. Lee, A.-L. Barabási, V. Kapatral, O. Wiest, and Z. N. Oltvai. A blueprint for antimicrobial hit discovery targeting metabolic networks. *PNAS*, 107:1082, 2010.
- [4] Y. Sohn, M. K. Choi, **Y.-Y. Ahn**, J. Lee, and J. Jeong. Topological cluster analysis elucidates the systemic organization. *submitted to PLoS Comp. Biol.*, 2009.
- [5] M. Cha, H. Kwak, P. Rodriguez, **Y.-Y. Ahn**, and S. Moon. Analyzing the video popularity characteristics of large-scale user generated content systems. *ACM/IEEE Transactions on Networking*, 17:1357, 2009.
- [6] F. Radicchi, **Y.-Y. Ahn**, and H. Meyer-Ortmanns. Impact of the updating scheme on stationary states of networks. *J. Phys. A: Math. Theor.*, 41:224010, 2008.
- [7] **Y.-Y. Ahn**, N. Masuda, H. Jeong, and J. D. Noh. Epidemic dynamics of two species of interacting particles on scale-free networks. *Phys. Rev. E*, 74:066113, 2006.
- [8] **Y.-Y. Ahn**, B. J. Kim, and H. Jeong. Wiring cost in the organization of a biological neuronal network. *physica A*, 367:531, 2006.
- [9] J. D. Noh, H.-C. Jeong, **Y.-Y. Ahn**, and H. Jeong. Growing network model for community with group structure. *Phys. Rev. E*, 71:036131, 2005.
- [10] D.-H. Kim, S.-W. Son, **Y.-Y. Ahn**, P.-J. Kim, Y.-H. Eom, and H. Jeong. Underlying scale-free trees in complex networks. *Progress of Theoretical Physics Supplement*, 157:213, 2005.
- [11] S.-W. Son, D.-H. Kim, **Y.-Y. Ahn**, and H. Jeong. Response network emerging from simple perturbation. *J. Korean Phys. Soc.*, 44:628, 2004.

PUBLICATIONS
(CONFERENCES)

- [1] H. Chun, H. Kwak, Y.-H. Eom, **Y.-Y. Ahn**, S. Moon, and H. Jeong. Comparison of online social relations in terms of volume vs. interaction: a case study of cyworld. In *Proceedings of ACM Internet Measurement Conference*, 2008.
- [2] M. Cha, H. Kwak, P. Rodriguez, **Y.-Y. Ahn**, and S. Moon. I tube, you tube, everybody tubes: Analyzing the world's largest user generated content video system. In *Proceedings of ACM Internet Measurement Conference*, 2007.
- [3] **Y.-Y. Ahn**, S. Han, H. Kwak, S. Moon, and H. Jeong. Analysis of topological characteristics of huge online social networking services. In *Proceedings of the 16th International World Wide Web Conference*, 2007.
- [4] S. Han, **Y.-Y. Ahn**, S. Moon, and H. Jeong. Collaborative blog spam filtering using adaptive percolation search. In *Proceedings of the 15th International World Wide Web Conference, workshop on the Weblogging Ecosystem*, 2006.

OTHER WORKS

- [1] A. Mislove, S. Lehmann, **Y.-Y. Ahn**, J.-P. Onnela, and J.N. Rosenquist. Pulse of the Nation: U.S. mood throughout the day inferred from twitter. <http://www.ccs.neu.edu/home/amislove/twittermood/>, 2010.
- [2] **Y.-Y. Ahn**, J. P. Bagrow, S. Lehmann, and A. Pawling. Twittermood: United States Map of Mood. <http://twittermood.net>, 2009.

SELECTED LIST OF
TALKS

Invited talks and lectures

- Oct. 2010, Seminars on Communications, Algorithms, Networking, and Security, “Link communities reveal multi-scale complexity in networks”, (CCIS, Northeastern University, MA, USA).
- Jan. 2008, 5th APCTP-KIAS Winter School on Statistical Physics (Topical Review), “Epidemics on meta-population network”, (Phoenix Park, Korea).

International Conferences

- Nonequilibrium Statistical Physics of Complex Systems, “Overlapping community structure and the percolation transition of community network” (KIAS, South Korea, July, 2010).
- New Frontiers in Complex Networks, “Link communities reveal multiscale complexity in networks” (SNU, South Korea, July, 2010).
- NetSci10, “Overlapping community structure and the percolation transition of community network” (Boston, U.S., May. 2010).
- NetSci09, “Hierarchical Link Clustering in Complex Networks” (Venice, Italia, Aug. 2009).
- APS March Meeting, “Hierarchical Link Clustering in Complex Networks” (Pittsburgh, PA, Mar. 2009).
- APPC10: The 10th Asia Pacific Physics Conference, “Analysis of Topological Characteristics of Huge Online Social Networking Services” (Postech, South Korea, Aug. 2007).
- WWW2007, “Analysis of Topological Characteristics of Huge Online Social Networking Services” (Banff, Alberta, Canada, May 2007).
- 3rd Int. Conf. on NEWS, EXPECTATIONS and TRENDS in Statistical Physics, “Wiring Cost in the Organization of a Neural Network” (Kolymbari, Greece, Aug. 2005).
- STATPHYS22, “Role of Wiring cost and Pattern Retrieval Performance in the Evolution of C. Elegans Neural Network” (Bangalore, India, July 2004).
- ICCS2004, “Extremely Clustered Network” (Boston, USA, May 2004).

PROFESSIONAL
SERVICE

Referee work

- Physics: Physica A, Physical Review Letters, Physical Review E, Physical Letters A
- Biology: BMC Systems Biology, IET Systems Biology
- Computer Science: WWW, SIGKDD

Program committee member

- CompleNet 2010

IN THE PRESS

List of media coverages

- Our project “Pulse of the nation: U.S. Mood Throughout the Day inferred from Twitter” was covered in several television programs, newspapers, and blogs including CBS, Fox News, New York Times, BBC, Time Magazine, Vanity Fair, Wall Street Journal, etc. (See [link to the selected list](#))
- Our paper “Link communities reveal multiscale complexity in networks” (Nature **466**, 761, 2010) was featured on [Northeastern News](#) and [Science On \(Hankyoreh\)](#).
- Our paper “Googling social interactions: Web search engine based social network construction” (PLoS One **5**, e11233, 2010) was featured on [New Scientist](#) and [Pocket Science](#).