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HIGHLIGHTS	<b>Highly cited research</b> (H-index: 22, i10-index: 35) <ul style="list-style-type: none"> <li>• Twitter as an information network [C8]: 7,265 times</li> <li>• YouTube video popularity characterization [C3]: 1,816 times</li> <li>• Huge online social network (OSN) analysis [C2]: 1,196 times</li> </ul> <b>Computational journalism</b> <ul style="list-style-type: none"> <li>• Media attention and public attention: TheWeb'18 [C35]</li> <li>• Media attention and disregard network: ASONAM'17 [C32]</li> <li>• Sentiment of news headlines: ICWSM'15 [C22] (featured by <a href="#">O Globo</a>)</li> <li>• Bias in foreign news coverage: Computation+Journalism Symposium'14 (featured by <a href="#">MIT Technology Review</a>, <a href="#">ACM Tech News</a>, etc.)</li> <li>• Tanbih news aggregator: EMNLP'19 Demo [C45] (featured by <a href="#">Forbes</a>, <a href="#">MIT Technology Review</a>, <a href="#">Wired</a>, <a href="#">Engadget</a>, etc.)</li> </ul> <b>Computational Social Science</b> <ul style="list-style-type: none"> <li>• Polarization on social media: ICWSM'19 [C42]; ICWSM'16 [C23]</li> <li>• User behavior in extreme situations: WWW Companion'17 [C27] (covered by <a href="#">New Scientist</a>, <a href="#">Daily Mail</a>, etc.)</li> <li>• Cyberbullying and toxic behavior and in online games: CHI'15 [C21]; WWW'14 [C15] (featured by <a href="#">Nature News</a>, <a href="#">Scientific American</a>, etc.)</li> <li>• Alt-right community analysis: WWW Companion'18 [C38] (featured by <a href="#">New Scientist</a>, <a href="#">Vice</a>, etc.)</li> <li>• Structures and dynamics of social media: WWW'10 [C8] (featured by <a href="#">Mashable Op-Ed</a>, <a href="#">Readwrite</a>, <a href="#">The Guardian</a>, <a href="#">MIT Technology Review</a>, etc.); CHI'11 [C10] (featured by <a href="#">Kyunghyang</a>); ICWSM'12 [C12]; CSCW'13 [C13]</li> </ul>	
INTERESTS	My research interests are data-driven modeling and large-scale analysis of online systems from social media to online games to better understand social phenomena. Recently, I more focus on understanding the obstacles to the trusted public space online in a data-driven way. In particular, I define <i>media bias</i> , <i>toxicity</i> , <i>polarization</i> , and <i>unfair representations</i> as the four major obstacles to the trusted web. I aim to develop methodologies to model them, construct transparent frameworks to monitor them at large-scale in real-time, and make the online public space more trustable.	
EDUCATION	Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea <ul style="list-style-type: none"> <li>Ph.D. in Computer Science <span style="float: right;">August 2011</span>            Advisor: <a href="#">Professor Sue Moon</a>            Dissertation: Multi-level Analysis on Structures and Dynamics of Online Social Networks</li> <li>M.S. in Computer Science <span style="float: right;">August 2007</span></li> <li>B.S. in Computer Science <span style="float: right;">February 2006</span></li> </ul>	

PROFESSIONAL  
EXPERIENCE

**Qatar Computing Research Institute, HBKU, Doha, Qatar**

Senior Scientist Jul 2016 - Present

Scientist Apr 2014 - Jun 2016

**Telefonica Research, Barcelona, Spain**

Researcher Jun 2012 - Apr 2014

**KAIST, Daejeon, Korea**

Research Assistant Aug 2011 - Oct 2011

**Telefonica Research, Barcelona, Spain**

Intern Sep 2007 - Dec 2007

AWARDS

2019 Best paper in International Conference on Social Informatics (SocInfo) '19

2018 [HBKU Innovation Idea Development Grants](#), Doha, Qatar

2016 [Qatar Science & Technology Park \(QSTP\) Accelerator program](#), Doha, Qatar

2011 Best Ph.D. Thesis in KAIST Computer Science Department, Daejeon, Korea

2007 Best paper award in ACM Internet Measurement Conference '17

PUBLICATIONS

**Journals**

- [J7] A. Zubiaga, B. Heravi, J. An, and **H. Kwak**. Social media mining for journalism. *Online Information Review*, 43(1):2–6, 2019
- [J6] J. An, **H. Kwak**, S. Jung, J. Salminen, M. Admad, and B.J. Jansen. Imaginary people representing real numbers: generating personas from online social media data. *ACM Transactions on the Web (TWEB)*, 12(4):27, 2018
- [J5] P. Mawhorter, S. Şengün, **H. Kwak**, and D.F. Harrell. Identifying regional trends in avatar customization. *IEEE Transactions on Games*, pages 1–11, 2018
- [J4] S.-Y. Shin, D.-W. Seo, J. An, **H. Kwak**, S.-H. Kim, J. Gwack, and M.-W. Jo. High correlation of Middle East respiratory syndrome spread with Google search and Twitter trends in Korea. *Scientific reports*, 6:32920, 2016
- [J3] H. Park, **H. Kwak**, M. Cha, and S. Moon. Influentials ranking in social networks. *Communications of the Korean Institute of Information Scientists and Engineers (in Korean)*, 28(3):24–30, 2010
- [J2] **H. Kwak**, S. Moon, Y. Eom, Y. Choi, and H. Jeong. Consistent community identification in complex networks. *Journal of the Korean Physical Society*, 59(5):3128–3132, 2011
- [J1] M. Cha, **H. Kwak**, P. Rodriguez, Y. Ahn, and S. Moon. Analyzing the video popularity characteristics of large-scale user generated content systems. *IEEE/ACM Transactions on Networking*, 17(5):1357–1370, Oct 2009

**Conferences**

- [C45] Y. Zhang, G.D.S. Martino, A. Barrón-Cedeño, S. Romeo, J. An, **H. Kwak**, T. Staykovski, I. Jaradat, G. Karadzhov, R. Baly, K. Darwish, J. Glass, and P. Nakov. Tanbih: Get to know what you are reading. In *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP): System Demonstrations*, pages 223–228, Hong Kong, China, November 2019. Association for Computational Linguistics
- [C44] J. An and **H. Kwak**. Gender and racial diversity in commercial brands’ advertising images on social media. In *International Conference on Social Informatics (SocInfo)*. Springer, 2019
- [C43] H. Almerexhi, **H. Kwak**, B.J. Jansen, and J. Salminen. Detecting toxicity triggers in online discussions. In *Proceedings of the 30th ACM Conference on Hypertext and Social Media*, pages 291–292. ACM, 2019
- [C42] J. An, **H. Kwak**, O. Posegga, and A. Jungherr. Political discussions in homogeneous and cross-cutting communication spaces. In *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM)*, volume 13, pages 68–79, 2019
- [C41] S. Jung, J. An, **H. Kwak**, J. Salminen, and B.J. Jansen. Assessing the accuracy of four popular face recognition tools for inferring gender, age, and race. In *Twelfth International AAAI Conference on Web and Social Media (ICWSM)*, pages 624–627, 2018
- [C40] J. Salminen, H. Almerexhi, M. Milenković, S. Jung, J. An, **H. Kwak**, , and B.J. Jansen. Anatomy of online hate: developing a taxonomy and machine learning models for identifying and classifying hate in online news media. In *Twelfth International AAAI Conference on Web and Social Media*, pages 330–339, 2018
- [C39] J. An, **H. Kwak**, and Y.-Y. Ahn. SemAxis: A lightweight framework to characterize domain-specific word semantics beyond sentiment. In *Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 2450–2461, Melbourne, Australia, July 2018. Association for Computational Linguistics
- [C38] S. Zannettou, B. Bradlyn, E. De Cristofaro, **H. Kwak**, M. Sirivianos, G. Stringini, and J. Blackburn. What is Gab: A bastion of free speech or an alt-right echo chamber. In *Companion Proceedings of the The Web Conference 2018*, pages 1007–1014. International World Wide Web Conferences Steering Committee, 2018
- [C37] J. Salminen, B.J. Jansen, J. An, S. Jung, L. Nielsen, and **H. Kwak**. Fixation and confusion: Investigating eye-tracking participants’ exposure to information in personas. In *Proceedings of the 2018 Conference on Human Information Interaction & Retrieval*, pages 110–119. ACM, 2018
- [C36] J. Salminen, **H. Kwak**, J. Santos, S. Jung, J. An, and B.J. Jansen. Persona perception scale: developing and validating an instrument for human-like representations of data. In *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems*, page LBW075. ACM, 2018
- [C35] **H. Kwak**, J. An, J. Salminen, S.-G. Jung, and B. Jansen. What we read, what we search: Media attention and public attention among 193 countries. In *Proceedings of the 2018 World Wide Web Conference*, pages 893–902. International World Wide Web Conferences Steering Committee, 2018
- [C34] J. An and **H. Kwak**. Multidimensional analysis of the news consumption of different demographic groups on a nationwide scale. In *International Conference on Social Informatics (SocInfo)*, pages 124–142. Springer, 2017
- [C33] J. An, H. Aldarbesti, and **H. Kwak**. Convergence of media attention across 129 countries. In *International Conference on Social Informatics (SocInfo)*, pages 159–168. Springer, 2017

- [C32] **H. Kwak** and J. An. Multiplex media attention and disregard network among 129 countries. In *Proceedings of the 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM) 2017*, pages 1225–1232. ACM, 2017
- [C31] J. Reis, **H. Kwak**, J. An, J. Messias, and F. Benevenuto. Demographics of news sharing in the US Twittersphere. In *Proceedings of the 28th ACM Conference on Hypertext and Social Media*, pages 195–204. ACM, 2017
- [C30] D.F. Harrell, S. Vieweg, **H. Kwak**, , C.-U. Lim, S. Sengun, A. Jahanian, and P. Ortiz. Culturally-grounded analysis of everyday creativity in social media: A case study in qatari context. In *Proceedings of the 2017 ACM SIGCHI Conference on Creativity and Cognition*, pages 209–221. ACM, 2017
- [C29] J. An and **H. Kwak**. Data-driven approach to measuring the level of press freedom using media attention diversity from unfiltered news. In *The Workshops of News and Public Opinion (NECO) co-located with Eleventh International AAAI Conference on Web and Social Media (AAAI Technical Report WS-17-17)*, 2017
- [C28] J. An and **H. Kwak**. What gets media attention and how media attention evolves over time: large-scale empirical evidence from 196 countries. In *Eleventh International AAAI Conference on Web and Social Media (ICWSM)*, pages 464–467, 2017
- [C27] A.R. Kang, J. Blackburn, **H. Kwak**, and H.K. Kim. I would not plant apple trees if the world will be wiped: Analyzing hundreds of millions of behavioral records of players during an MMORPG beta test. In *Proceedings of the 26th International Conference on World Wide Web Companion*, pages 435–444. International World Wide Web Conferences Steering Committee, 2017
- [C26] K. Park, M. Cha, **H. Kwak**, and K.-T. Chen. Achievement and friends: Key factors of player retention vary across player levels in online multiplayer games. In *Proceedings of the 26th International Conference on World Wide Web Companion*, pages 445–453. International World Wide Web Conferences Steering Committee, 2017
- [C25] **H. Kwak** and J. An. Revealing the hidden patterns of news photos: Analysis of millions of news photos through GDELT and deep learning-based vision APIs. In *The workshop on News and Public Opinion co-located with Tenth International AAAI Conference on Web and Social Media (AAAI Technical Report WS-16-18)*, 2016
- [C24] **H. Kwak** and J. An. Two tales of the world: Comparison of widely used world news datasets GDELT and EventRegistry. In *Tenth International AAAI Conference on Web and Social Media*, pages 619–622, 2016
- [C23] J. An, **H. Kwak**, Y. Mejova, S.A.S. De Ogar, and B.G. Fortes. Are you Charlie or Ahmed? cultural pluralism in Charlie Hebdo response on Twitter. In *Tenth International AAAI Conference on Web and Social Media (ICWSM)*, pages 2–11, 2016
- [C22] D. Reis, F. Benevenuto, P. Olmo, P. Raquel, **H. Kwak**, and J. An. Breaking the news: First impressions matter on online news. In *Ninth International AAAI Conference on Web and Social Media (ICWSM)*, 2015
- [C21] **H. Kwak**, J. Blackburn, and S. Han. Exploring cyberbullying and other toxic behavior in team competition online games. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI)*, pages 3739–3748. ACM, 2015
- [C20] I. Leontiadis, A. Lima, **H. Kwak**, R. Stanojevic, D. Wetherall, and D. Papagiannaki. From cells to streets: Estimating mobile paths with cellular-side data. In *Proceedings of the 10th ACM International on Conference on emerging Networking Experiments and Technologies (CoNEXT)*, pages 121–132. ACM, 2014

- [C19] **H. Kwak** and J. An. A first look at global news coverage of disasters by using the GDELT dataset. In *International Conference on Social Informatics (SocInfo)*, pages 300–308. Springer, 2014
- [C18] **H. Kwak** and J. Blackburn. Linguistic analysis of toxic behavior in an online video game. In *Workshop on Exploration on Games and Gamers co-located with international Conference on Social Informatics*, pages 209–217. Springer, 2014
- [C17] L. Gyarmati, **H. Kwak**, and P. Rodriguez. Searching for a unique style in soccer. In *2014 KDD Workshop on Large-Scale Sports Analytics*, 2014
- [C16] M. Martin, R.D. Oliveira, **H. Kwak**, , and N. Oliver. Didn’t you see my message?: predicting attentiveness to mobile instant messages. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pages 3319–3328. ACM, 2014
- [C15] J. Blackburn and **H. Kwak**. STFU NOOB!: predicting crowdsourced decisions on toxic behavior in online games. In *Proceedings of the 23rd international conference on World wide web*, pages 877–888. ACM, 2014
- [C14] Y. Hong, **H. Kwak**, Y. Baek, and M. Sue. Tower of babel: A crowdsourcing game building sentiment lexicons for resource-scarce languages. In *Proceedings of the 22nd International Conference on World Wide Web, WWW ’13 Companion*, pages 549–556, New York, NY, USA, 2013. ACM
- [C13] B. Xu, Y. Huang, **H. Kwak**, and N. Contractor. Structures of broken ties: Exploring unfollow behavior on Twitter. In *Proceedings of the 2013 Conference on Computer Supported Cooperative Work, CSCW ’13*, pages 871–876, New York, NY, USA, 2013. ACM
- [C12] **H. Kwak**, S. Moon, and W. Lee. More of a receiver than a giver: why do people unfollow in Twitter? In *Sixth International AAAI Conference on Weblogs and Social Media*, pages 499–502, 2012
- [C11] **H. Kwak**, Y. Hong, J. You, and S. Moon. Visualizing a personal timeline by adding multiple social contexts. In *The workshop on Social Media Visualization co-located with International AAAI Conference on Web and Social Media (AAAI Technical Report WS-12-03)*, 2012
- [C10] **H. Kwak**, H. Chun, and S. Moon. Fragile online relationship: a first look at unfollow dynamics in Twitter. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pages 1091–1100. ACM, 2011
- [C9] C. Lee, **H. Kwak**, H. Park, and S. Moon. Finding influentials based on the temporal order of information adoption in Twitter. In *Proceedings of the 19th international conference on World wide web*, pages 1137–1138. ACM, 2010
- [C8] **H. Kwak**, C. Lee, H. Park, and S. Moon. What is Twitter, a social network or a news media? In *Proceedings of the 19th international conference on World wide web*, pages 591–600. ACM, 2010
- [C7] S. Moon, J. You, **H. Kwak**, D. Kim, and H. Jeong. Understanding topological mesoscale features in community mining. In *2010 Second International Conference on COMMunication Systems and NETWORKS (COMSNETS 2010)*, pages 1–10. IEEE, 2010
- [C6] **H. Kwak**, Y. Choi, Y. Eom, H. Jeong, and S. Moon. Mining communities in networks: a solution for consistency and its evaluation. In *Proceedings of the 9th ACM SIGCOMM conference on Internet measurement*, pages 301–314. ACM, 2009
- [C5] X. Amatriain, N. Lathia, J. Puyol, **H. Kwak**, and N. Oliver. The wisdom of the few: a collaborative filtering approach based on expert opinions from the web. In *Proceedings of the 32nd international ACM SIGIR conference on Research and development in information retrieval*, pages 532–539. ACM, 2009

- [C4] H. Chun, **H. Kwak**, Y. Eom, Y.-Y. Ahn, S. Moon, and H. Jeong. Comparison of online social relations in volume vs interaction: A case study of cyworld. In *Proceedings of the 8th ACM SIGCOMM Conference on Internet Measurement*, IMC '08, pages 57–70, New York, NY, USA, 2008. ACM
- [C3] 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 the 7th ACM SIGCOMM Conference on Internet Measurement*, IMC '07, pages 1–14, New York, NY, USA, 2007. ACM
- [C2] 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 Conference on World Wide Web*, WWW '07, pages 835–844, New York, NY, USA, 2007. ACM
- [C1] **H. Kwak**, S. Han, Y.-Y. Ahn, S. Moon, and H. Jeong. Impact of snowball sampling ratios on network characteristics estimation: A case study of cyworld. In *Proceedings of the Korean Information Science Society Conference*, 2006

## Patents

- [P4] N. Oliver M. Pielot, **H. Kwak**, and R. Oliveira. Method for predicting reactivity of users of mobile devices for mobile messaging, June 25 2015. US Patent App. 14/577,488
- [P3] **H. Kwak** and E. Martinez. Method, system and computer-readable storage mediums for estimating a route, January 8 2015. US Patent App. 14/323,186
- [P2] S. Moon, **H. Kwak**, H. Shin, and J. Yoon. System and method for extracting users of similar interests between various types of web servers, April 16 2013. US Patent 8,423,542
- [P1] X. Amatriain, J. Puyol, N. Lathia, P. Rodriguez, and **H. Kwak**. Recommender system based on expert opinions, June 9 2011. US Patent App. 12/630,606

## ADVISING

**Hamad Bin Khalifa University**, Doha, Qatar

*Co-supervisor*

March 2017 - Present

Hind Al-merekhi, PhD candidate at Hamad Bin Khalifa University

## PROFESSIONAL SERVICE

### Editorial services

- Editorial board member, [Online Social Networks and Media](#) (Science Citation Index Expanded journal): 2019-present
- Editorial board member, [Digital Journalism](#) (2018 Impact Factor 2.679): 2020-

### Organization

- Co-organizer, Workshop on Bias, Disinformation, Misinformation, and Propaganda in Online News and in Social Media co-located with SocInfo'19, Doha, Qatar (2019)
- Workshop chair, 29th ACM Conference on Hypertext and Social Media (HT), Baltimore, Maryland, USA (2018)
- Co-organizer, 3rd International Workshop on NEws and publiC Opinion (NECO 2018) co-located with ICWSM'18, Stanford, CA, USA (2018)
- Co-organizer, 4th workshop on Social News on the Web (SNOW 2016) Co-located with WWW'17, Perth, Australia (2017)

- Co-organizer, 2nd International Workshop on NEws and publiC Opinion (NECO 2017) co-located with ICWSM'17, Montreal, Canada (2017)
- Co-organizer, 3rd workshop on Social News on the Web (SNOW 2016) Co-located with WWW'16, Montreal, Canada (2016)
- Co-organizer, 1st International Workshop on NEws and publiC Opinion (NECO 2016) co-located with ICWSM'16, Cologne, Germany (2016)
- Track chair (with Alessandra Sala and Aristides Gionis), Social Networks and Graph Analysis Track in 2016 International World Wide Web Conference, Montreal, Canada (2016)
- Co-organizer, 1st International Workshop on Exploration Games and Gamers (EGG) co-located with SocInfo'14, Barcelona, Spain (2014)
- Registration chair, ACM Internet Measurement Conference (IMC), Barcelona, Spain (2013)

#### **Program Committee Member**

- The Web (WWW) Web and Society Track: 2018, 2019, 2020
- The Web (WWW) Social Network and Graph Analysis: 2014, 2015, 2016, 2018, 2019
- The Web (WWW) Poster: 2014
- ICWSM Senior PC: 2014, 2018, 2019, 2020
- ICWSM PC: 2013
- WWW Cybersafety Workshop: 2018, 2019
- ACL Abusive Language Workshop (ALW): 2019
- CKIM Rumours and Deception in Social Media Workshop: 2018
- Complex Networks: 2018
- IEEE ICDCS Social Networks and Crowdsourcing: 2018
- European Symposium Societal Challenges in Computational Social Science: 2017
- SocInfo Senior PC: 2014, 2015, 2016
- LC2S2 (At the crossroads: lessons and challenges in Computational Social Science): 2016
- ACL Workshop on NLP and Social Dynamics: 2014
- WebSci: 2014
- WWW Connecting online and offline life (COOL) Workshop: 2014
- WWW Simplifying Complex Networks for Practitioners (SIMPLEX) Workshop: 2014
- SocInfo Interaction and Exchange in Social Media Workshop: 2014
- ACM Hypertext: 2014
- European Conference on Complex Systems (ECCS): 2013
- CIKM Search and Mining User-generated Contents Workshop: 2013

**Selected list of media coverages**

- “What is Gab? A Bastion of Free Speech or an Alt-Right Echo Chamber?” (WWW Cybersafety workshop)
  - [New Scientist](#)
  - [Vice](#)
- “Data-driven Approach to Measuring the Level of Press Freedom Using Media Attention Diversity from Unfiltered News” (ICWSM’17)
  - [The Best of the Physics arXiv \(week ending April 15, 2017\) in MIT Technology Review](#)
- “I Would Not Plant Apple Trees If the World Will Be Wiped: Analyzing Hundreds of Millions of Behavioral Records of Players During an MMORPG Beta Test” (WWW Companion’17)
  - [New Scientist](#)
  - [Daily Mail](#)
  - [IFL Science \(18.1K shared\)](#)
  - [PC Gamer](#)
  - [Massively Overpowered](#)
  - [4Gamers](#)
  - [El Confidencial](#)
  - [Joongang Ilbo](#)
  - [How Stuff Works](#)
  - [PC Gamer](#)
  - [Digital Trends](#)
  - [Engadget](#)
- “Revealing the Hidden Patterns of News Photos: Analysis of Millions of News Photos Using GDELT and Deep Learning-based Vision APIs” (ICWSM Workshop on News and Public Opinion’16)
  - [The Best of the Physics arXiv \(week ending March 26, 2016\) in MIT Technology Review](#)
- “Breaking the News: First Impressions Matter on Online News” (ICWSM’15)
  - [Other Interesting arXiv Papers \(Week ending April 11, 2015\) in MIT Technology Review](#)
  - [O Globo](#)
- “Understanding News Geography and Major Determinants of Global News Coverage of Disasters” (Computation+Journalism Symposium’14)
  - [MIT Technology Review](#)
  - [ACM Tech News](#)
- “Searching for a Unique Style in Soccer” (KDD Workshop on Large-scale Sports Analytics’14)
  - [BBC](#)
  - [MIT Technology Review](#)
  - [The Sunday Times](#)
  - [The Economist](#)
  - [Slate](#)



- [Pacific Standard](#)
- “Linguistic Analysis of Toxic Behavior in an Online Video Game” (SocInfo Workshop on Exploration Games and Gamers’14)
  - [Other Interesting arXiv Papers \(Week ending November 1, 2014\) in MIT Technology Review](#)
- “STFU NOOB! Predicting Crowdsourced Decisions on Toxic Behavior in Online Games” (WWW’14)
  - [Nature News](#)
  - [Scientific American](#)
  - [Chosun Ilbo](#)
- “Fragile Online Relationship: a First Look at Unfollow Dynamics in Twitter” (CHI’11)
  - [Kyunghyang Shinmun](#)
- “What is Twitter, a Social Network or a News Media?” (WWW’10)
  - [Mashable](#)
  - [Readwrite](#)
  - [Gigom](#)
  - [The Guardian](#)
  - [PC World](#)
  - [MIT Technology Review](#)
  - [Chosun Ilbo](#)
  - [Dong-A Ilbo](#)

REFERENCES

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