

Curriculum Vitae

SOOJONG KIM

Doctoral Candidate

Annenberg School for Communication, University of Pennsylvania

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(Updated on June 21st, 2019)**EDUCATION**

Doctoral Candidate, Communication (Computational Social Science)

Annenberg School for Communication, University of Pennsylvania

August 2015 – May 2020 (Expected)

Master of Arts, Communication

Annenberg School for Communication, University of Pennsylvania, 2017

Master of Arts, Sociology

Seoul National University, 2014

Master of Science, Electrical Engineering and Computer Science

Seoul National University, 2008

Bachelor of Science, Electrical and Computer Engineering (Cum laude)

Seoul National University, 2006

PROFESSIONAL SKILL

- Experiment design & implementation
- Network analysis
- Advanced statistical analysis: longitudinal data analysis, multilevel and hierarchical models, advanced mediation and moderation models, factor analysis, survival analysis.
- Programming Languages: C/C++, Java, Python, Pearl, Visual Basic, R, JavaScript, HTML, PHP, node.js, SQL, Android, VHDL.
- Statistical/Mathematical analysis: R, Stata, SAS, SPSS, M-plus, Matlab.
- Computational modeling and simulation
- Large-scale data analysis & text mining

PROFESSIONAL EXPERIENCE

Researcher/ Engineer in Computer Science and Engineering

February 2008 – July 2011

Digital Media & Communications R&D Center, Samsung Electronics

Suwon, Gyeonggi Province, Republic of Korea

I worked as a researcher and an engineer at the Digital Media & Communications R&D Center, Samsung Electronics. First, I researched and developed advanced mobile communication systems, such as

smartphones and network devices complying global communication standards. Especially, I was actively involved in the research and development of Samsung's smartphone devices (Galaxy S series) and its first 4G LTE network systems. I also communicated and cooperated with mobile service providers around the world to develop technologies satisfying their needs. These companies included Verizon Wireless, Sprint, MetroPCS, T-Mobile, Vodafone, Orange, China Mobile, America Movil, Tata DoCoMo, Reliance, NTT DoCoMo, au, and Softbank.

Second, I conducted computational simulations to evaluate and optimize the performance of communication devices in various environments. Mobile systems involve massive-scale, highly complicated interactions not only among computational components inside the machines but among network equipment, mobile devices, and people who use these devices. To investigate these complex dynamics, I used large-scale computational simulations, called SLS (System Level Simulation). I developed, conducted, and analyzed SLS to examine how the performance of communication systems is affected by diverse factors, such as national policy restriction, interruption from competitors, and user preference. Using the C and C++ languages, I have built simulators and conducted large-scale simulations and data analysis.

Also, I analyzed data obtained from users and mobile devices in the real world to evaluate and improve the performance of communication systems. Due to the huge volumes of the data, this task involved large-scale data management and analysis. It also required understanding various external factors, such as the social and demographic characteristics of smartphone users and the geographic attributes of mobile service areas, and combining relevant data into the analysis, which demanded skills to manage big data with complicated structures.

AWARD AND HONOR

- Russell Ackoff Doctoral Fellowship Award*** May 2019
 Grantor: Wharton Risk Center, University of Pennsylvania
 Project Title: "How social dynamics influence the persuasiveness and virality of misinformation."
- Top 4 Best Paper*** May 2019
 Grantor: Information Systems Division, International Communication Association
 Paper Title: "Directionality of information flow and echoes without chambers." (Single author)
- Conference Program Chair*** May 2019
 Program Title: Simulation Studies of Communication
 Division: Computational Methods Interest Group, International Communication Association
- Conference Travel Grant, International Communication Association Conference*** May 2019
 Grantor: International Communication Association
- Conference Travel Grant, International Communication Association Conference*** May 2019
 Grantor: Computational Methods Interest Group, International Communication Association

Samsung Electronics Humantech Paper Award (Bronze)

February 20, 2008

Grantor: Samsung Electronics

Paper Title: "Precoding for Non-regenerative MIMO-Relay System." (1st author)***Best Poster Paper***

December 8, 2007

Grantor: IEEE Seoul Section

Paper Title: "Downlink non-regenerative MIMO-relay system based on partial channel state information." (3rd author)***Award for Excellence***

July 22, 2005

Grantor: Samsung Electronics

In recognition of outstanding performance in Wireless Communication System Design Education Program

Award for Achievement

January 20, 2006

Grantor: Samsung Electronics

In recognition of contribution in ARM-based SoC System Design Education Program

SCHOLARSHIP

Research Fellowship from Annenberg School for Communication, 2015 - 2019

Summer Research Fellowship from Annenberg School for Communication, 2016 - 2019

Lecture and Research Scholarship from Seoul National University, 2012 - 2014

SNU Development Fund Scholarship, fall semester, 2012

Brain Korea 21 Scholarship from Seoul National University, 2007

Electronic Communication Research Foundation Scholarship, March 2007

National Merit Scholarship from Seoul National University, fall semester, 2003

Scholarship for Superior Academic Performance from Seoul National University, 2002 - 2006

PUBLICATION AND PRESENTATION

• Peer-reviewed Journal Article

Kim, S., (2019). Directionality of Information Flow and Echoes Without Chambers, *PLOS ONE*Hopkins, D., Kim, E., **Kim, S.**, (2017). Does Newspaper Coverage Influence or Reflect Public Perceptions of the Economy, *Research & Politics*Suh, Y., **Kim, S.**, (2015). Accumulation of representable personal information through mobile applications of smartphones and policy implications of privacy protection, *Information Society & Media***Kim, S.**, (2019). Chambers Without Echoes: Computational and Experimental Evidence on Information Propagation between Segregated Social Groups, *Under Review*.

Kim, S., Oh, P., (2019). Network Backfire Effect: Enhanced Network Heterogeneity Exacerbates Perceived Information Bias in Social Media, *Under Review*.

Oh, P., **Kim, S.,** (2019). An Evolutionary Model of the Emergence of Meanings, *Under Review*.

Kim, S., (2019). Polarizing Machine: How Social Media Algorithms Induce Insular Behavior and Biased Perception, *Under Review*.

Stevenson, H. C., Jemmott, L. S., Jemmott, J. B., White, S. L., Talley, L. M., Chittamuru, D., **Kim, S.,** (2019). Efficacy and Mediation of a Racial Literacy-Infused Barbershop-based Intervention to Reduce Violence Retaliation for Young African American Men: A Cluster-Randomized Controlled Trial, *Under Review*.

Cederbaum, J. A., **Kim, S.,** Grest, C. V., Jemmott, J. B., Jemmott, L. S., (2018). Effect of a Church-based Intervention on Abstinence and Safer Sex Communication among African American parent-child dyads, *Under Review*.

- Book

Park, K., Suh, Y., **Kim, S.,** Ryu, Y., Lee, S., and Lee, J. (2013). *The Vortex of Generational Conflict*. Hanul Publishing. (ISBN: 9788971104095)

- Conference Presentation and Proceeding

Kim, S., Oh, P., “Network Backfire Effect: Enhanced Network Heterogeneity Exacerbates Perceived Information Bias in Social Media,” *National Communication Association (NCA) Conference*, Baltimore, MD, United States, November 2019.

Kim, S., “Directionality of Information Flow and Echoes Without Chambers,” *Annual International Communication Association (ICA) Conference*, Washington DC, United States, May 2019.

Top 4 Best Paper Award, Information Systems Division.

Conference Travel Grant, ICA.

Kim, S., “Chambers without Echoes: Computational and Experimental Evidence on Information Propagation in Homogeneous Networks,” *Annual International Communication Association (ICA) Conference*, Washington DC, United States, May 2019.

Conference Travel Grant, ICA Computational Methods Interest Group.

Oh, P., **Kim, S.,** “An Evolutionary Model of the Emergence of Meanings,” *Annual International Communication Association (ICA) Conference*, Washington DC, United States, May 2019.

Kim, S., “Directionality of Information Flow and Echoes Without Chambers,” *Annual Graduate Student Symposium*, Annenberg School for Communication, University of Pennsylvania, Philadelphia PA, United States, April 2019.

Kim, S., “Creating Echo Chamber: How Biased Flow of Information Can Be Engineered,” *International Conference on Computational Social Science*, Evanston, Illinois, July 2018.

Kim, S., Herbert, N., van de Rijdt, A., Centola, D., “Emergence and stability of status hierarchy,” *International Conference on Computational Social Science*, Cologne, Germany, July 2017.

Kim, S., Centola, D., "A seeding strategy to promote the spread of behavior on social networks," *International School and Conference on Network Science*, Indianapolis, Indiana, June 2017.

Kim, S., Herbert, N., van de Rijdt, A., Centola, D., “Emergence and stability of status hierarchy,” *Annenberg Graduate Student Symposium*, March 2017.

- Herbert, N., **Kim, S.**, and Centola, D., “Is inequality inevitable? An agent-based bargaining model of network structure and nominal characteristic tags”, *Advances in Mathematical Sociology session, Annual Meeting of the American Sociological Association*, Seattle, Washington, August 2016.
- Herbert, N., **Kim, S.**, and Centola, D., “Is inequality inevitable? An agent-based bargaining model of network structure and nominal characteristic tags”, *International Conference on Computational Social Science*, Evanston, Illinois, June 2016.
- Kim, S.** (2013). “Analysis on Interaction between Smartphone Applications and Users.” *Proceedings of Korean Sociological Association Conference*. (June 21, 2013. Kangwon National University, Chuncheon): 513-523
- Kim, S.** (2013). “Globalization of Smartphone Technology and Global Patterns of Its Use.” *Proceedings of the 3rd PKU-SNU Joint Symposium*. (November 23, 2013. Peking University, Beijing)
- Kim, S.** (2013). “Information Politics in Cyberspace.” Korean Association of Science and Technology Studies (KASTS) Science Studies Joint Conference (September. 28. 2013. Hanyang University, Seoul).
- Suh, Y. and **Kim, S.** (2012). “Cumulativeness of Personal Information on Mobile Application and Privacy Protection.” *Proceedings of Korean Society for the Sociology of Law Spring Conference*. (June 16, 2012. Sogang University, Seoul.): 19-59
- Je, H., Lee, B., **Kim, S.**, and Lee, K. (2008) "Design of Non-Regenerative MIMO-Relay System with Partial Channel State Information." *Proceedings of IEEE International Conference on Communications (ICC)*: 4441 - 4445
- Je, H., Lee, B., **Kim, S.**, and Lee, K. (2008) "Relay Signal Processing for Downlink MIMO-Relay Systems with Partial Channel State Information." *Proceedings of Korean Institute of Communications and Information Sciences (KICS) Conference*: 518-522
- Kim, S.**, Je, H., Lee, B., and Lee, K. (2007) "Precoding for Non-Regenerative MIMO-Relay System." *Proceedings of Korean Institute of Communications and Information Sciences (KICS) Conference*: 1077-1080

TEACHING

- Teaching Fellow**, Annenberg School for Communication, University of Pennsylvania
 Introduction to Communication Behavior (COMM 125), fall semester, 2018
 (*Guest Lecturer*, “Social Media and Mass Influence,” November 14, 2018)
- Teaching Certificate in College and University Teaching**, Center for Teaching & Learning, University of Pennsylvania, 2018
- Teaching Assistant**, Department of Sociology, Seoul National University
 Knowledge Society and Professionals, spring semester, 2012
 Scientific Technology and Society, fall semester, 2012
 Information Society and Cyber Society, spring semester, 2014
 (*Guest Lecturer*, “Online Community and Cyber-Nationalism,” April 17, 2014)
 Sociology of Knowledge, fall semester, 2014
 (*Guest Panel* for Midterm presentation, November 4, 2014)

POSITION

Computer and Technology Committee representative, Annenberg School for Communication, 2016 - 2018

President, Graduate Student Council of Department of Sociology, Seoul National University, 2014 – 2015

President, Chungwon High School Alumni Association in Seoul National University, 2003 –2004

Director, Undergraduate Student Council of Department of Electrical and Computer Engineering, Seoul National University, 2003 –2004

PROJECT AND RESEARCH PARTICIPATION

Principal Investigator 2012 –2013

Project Title: Smartphone and Society: Sociological Analysis of Smartphone

Sponsor: LG Electronics

Description: The project aimed to inspire new smartphone design. For designers at LG Electronics, I gave lectures on diverse sociological findings and theories, which provide new perspectives on society and social changes.

Assistant Researcher 2013

Project Title: Cyber-nationalism of China and Korea

Principal Investigator: Prof. Yijong Suh (Seoul National University)

Description: By analyzing online discourse on political and cultural issues that were controversial among Korean and Chinese people, this project aimed to investigate the characteristics of nationalism in cyberspace. I collected online discourse data and conducted social network analysis. The result of this project was published: Suh, Yijong and Tang Lei. (2012). "A Comparative Study on Cyber-nationalism of China and Korea," *Communication World Politics*. vol. 18 (ISBN 9788964356678).

Assistant Researcher 2013

Project Title: Preparation of Measures for Intergenerational Communication and Harmony

Sponsor: Korean Presidential Committee on Social Cohesion, Korean Sociological Association

Principal Investigator: Prof. Keongsuk Park (Seoul National University)

Description: Based on a nationwide survey, this project identified political, economic, cultural, and familial aspects of generational conflicts, and provided practical solutions. I participated in designing the survey, analyzing statistical data, and writing the final report.

PATENT

- K. B. Lee, H. W. Je, B. O. Lee, and **S. Kim**, "Method for installation of apparatus with multiple antennae," Korea Patent, 10-0882865 (2009)
- H. W. Je, K. B. Lee, B. O. Lee, and **S. Kim**, "Wireless repeater with multiple antenna and method thereof," Korea Patent, 10-0901800 (2009)