

# Hyunuk Kim

600 Foster Street, Evanston, IL 60208, USA  
hyunuk\_kim@postech.ac.kr • +1 (224) 307-0821 •  
<http://hkim07.github.io>

## EDUCATION

**Pohang University of Science and Technology (POSTECH)**, Pohang, Republic of Korea

- Ph.D. Candidate in Industrial and Management Engineering Sep 2016 – Present
  - Advisor: Prof. Woo-Sung Jung
  - Research Interests: Computational Social Science, Network Science, Innovation
- M.S. in Industrial and Management Engineering Sep 2014 – Aug 2016
- B.S. in Mathematics (minor in Industrial and Management Engineering) Mar 2007 – Feb 2013

## RESEARCH EXPERIENCES

**Kellogg School of Management, Northwestern University**, Evanston, IL, USA  
(affiliated with Northwestern Institute on Complex Systems)

- Visiting Pre-Doctoral Fellow Jan 2018 – Jan 2019
  - Advisor: Prof. Hyejin Youn

**Santa Fe Institute**, Santa Fe, NM, USA

- Visiting Student Researcher Feb 2016 – Mar 2016
  - Finding patterns in a high-dimensional sparse data of world mythology and folklore

## PUBLICATIONS

- Hyunuk Kim, Sang-Jin Ahn, and Woo-Sung Jung, “Horizon scanning in policy research database with a probabilistic topic model”, *Technological Forecasting & Social Change*, in press.
- Hyunuk Kim and Woo-Sung Jung, “Does pitch type-zone uncertainty matter to pitcher’s performance?”, *New Physics: Sae Mulli*, vol. 68, no. 6, 2018.
- Hyunuk Kim, Taekho You, Sang-Jin Ahn, and Woo-Sung Jung, “Embracing networks of national policy research in future foresight” *International Journal of Knowledge-Based Development*, vol. 7, no. 2, pp. 107–124, 2016.
- Hyunuk Kim and Woo-Sung Jung, “Bibliometric analysis of collaboration network and the role of research station in Antarctic science” *Industrial Engineering & Management Systems*, vol. 15, no. 1, pp. 92–98, 2016.
- Hyunuk Kim and Sang-Jin Ahn, Woo-Sung Jung, “A Study on Technology Forecasting based on Co-occurrence Network of Keyword in Multidisciplinary Journals” *The Korean Operations Research and Management Science Society*, vol. 40, no. 4, pp. 49–63, 2015.

## WORKING PAPERS

- [1] Hyunuk Kim, Inho Hong, and Woo-Sung Jung, “Measuring national capacity over big science’s multidisciplinary: A case of nuclear fusion research”, under review.
- [2] Hyunuk Kim, Daniel Kim, Young-Ho Eom, Hawoong Jeong, Woo-Sung Jung, and Hyejin Youn, “Building knowledge space from microscopic behaviors to macro structure”
- [3] Hyunuk Kim, Marcus J. Hamilton, Woo-Sung Jung, and Hyejin Youn, “The deep structure of global mythologies”

## HONORS & AWARDS

### HONORS

- 2017 Global PhD Fellow, Ministry of Education, Republic of Korea Mar 2017 – Feb 2020
  - Fellowship program for accepted research proposals
  - Project: “Evolutionary dynamics of technological innovation”
- Creative KISTEP Fellow, KISTEP, Republic of Korea Apr 2017 – Aug 2017
  - (KISTEP: Korea Institute of S&T Evaluation and Planning)
  - Project: “Analyzing S&T knowledge structure by community detection in multislice network”
- Asan Young Fellow, Asan Institute for Policy Studies, Republic of Korea Apr 2013 – Dec 2013
  - Education program for Philosophy, Politics, and Economics;
  - Internship at American Association for the Advancement of Science (AAAS), USA

## AWARDS

- Nonprofit Startup Incubator Program, Seoul NPO Center Jun 2018 – Dec 2018  
PRISMING: Blockchain for in-kind donation
- First Prize, Graduate Research Contest, Industrial and Management Engineering, POSTECH 2017
- Excellence Award, The 12th Master's Student Research Contest, KIIE Fall Conference 2016 2016  
(KIIE: Korean Institute of Industrial Engineers)
- Encouraging Paper Award, SOItmC & Knowledge Cities World Summit 2015 2015

## SELECTED PRESENTATIONS

- Reconstructing technology space from a secret recipe of high impact innovation 15 Jul 2018  
*4th Annual International Conference on Computational Social Science*, Evanston, USA
- The structure of mythologies explains early human migrations out of Africa 13 Jul 2018  
*4th Annual International Conference on Computational Social Science*, Evanston, USA
- Building technology space from microscopic dynamics to macro structure 20 Sep 2017  
*Conference on Complex Systems 2017*, Cancun, Mexico
- The structure of mythologies explains the human expansion out of Africa 20 Sep 2017  
*Conference on Complex Systems 2017*, Cancun, Mexico
- Measuring the impact of Tesla's open patents on electric vehicle market 19 Nov 2016  
*Korean Institute of Industrial Engineers Fall Conference 2016*, Seoul, Republic of Korea
- Fusion of nations, fusion of disciplines: network evolution in nuclear fusion research 20 Sep 2016  
*Conference on Complex Systems 2016*, Amsterdam, Netherlands
- Predicting future issues with keyword network of national policy research 16 Jun 2015  
*SOItmC & Knowledge Cities World Summit 2015*, Daegu, Republic of Korea

## RESEARCH TOOLS

- Computing Languages: R, Python, C, JavaScript
- Network Visualization Software: Gephi, Pajek, Cytoscape

## REFERENCES

- Dr. Woo-Sung Jung, *Associate Professor*  
Department of Industrial and Management Engineering / Physics  
Pohang University of Science and Technology, Pohang 37673, Republic of Korea  
wsjung@postech.ac.kr • +82 (54) 279-1263
- Dr. Hyejin Youn, *Assistant Professor*  
Management & Organizations Department at Kellogg School of Management  
Northwestern University, Evanston, IL 60208, USA  
hyejin.youn@kellogg.northwestern.edu
- Dr. Marcus J. Hamilton, *Associate Professor of Data Analytics*  
Department of Anthropology  
University of Texas at San Antonio, San Antonio, TX 78249, USA  
marcus.hamilton@utsa.edu

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