

# Hyunuk Kim

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(Updated on October 12, 2020)

## ACADEMIC POSITIONS

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**Boston University**, Boston, MA, USA

Postdoctoral Associate, Information Systems, Questrom School of Business  
(affiliated with the Institute for Health System Innovation & Policy)

Aug 2019 – Present

Advisor: Prof. Dylan Walker

**Northwestern University**, Evanston, IL, USA

Visiting Predoctoral Fellow, Management & Organizations, Kellogg School of Management  
(affiliated with the Northwestern Institute on Complex Systems)

Jan 2018 – Jul 2019

Advisor: Prof. Hyejin Youn

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

Visiting Student Researcher

Feb 2016 – Mar 2016

## EDUCATION

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

Ph.D. in Industrial and Management Engineering

Sep 2016 – Aug 2019

Advisor: Prof. Woo-Sung Jung

Dissertation: Collective Patterns and Dynamics of Knowledge Creation

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 INTERESTS

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Computational Social Science (collective learning, collaboration)

Network Science (growth model, community detection, homophily)

Innovation (foresight, technological change, evolutionary dynamics)

Misinformation (social media, machine learning, healthcare, intervention)

## PUBLICATIONS

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Kim, Hyunuk, and Dylan Walker, "Leveraging volunteer fact checking to identify misinformation about COVID-19 in social media." *Harvard Kennedy School Misinformation Review* 1, no. 3 (2020).

Kim, Hyunuk, Sang-Jin Ahn, and Woo-Sung Jung. "Horizon scanning in policy research database with a probabilistic topic model." *Technological Forecasting and Social Change* 146 (2019): 588-594.

Kim, Hyunuk, Inho Hong, and Woo-Sung Jung. "Measuring national capability over big science's multidisciplinary: A case study of nuclear fusion research." *PLoS One* 14, no. 2 (2019).

- Kim, Hyunuk, and Woo-Sung Jung. "Does pitch type-zone uncertainty matter to pitcher's performance?." *New Physics: Sae Mulli* 68, no. 6 (2018): 624-629.
- Kim, Hyunuk, Taekho You, Sang-Jin Ahn, and Woo-Sung Jung. "Embracing networks of national policy research in future foresight." *International Journal of Knowledge-Based Development* 7, no. 2 (2016): 107-124.
- Kim, Hyunuk, and Woo-Sung Jung. "Bibliometric analysis of collaboration network and the role of research station in Antarctic science." *Industrial Engineering & Management Systems* 15, no. 1 (2016): 92-98.
- Kim, Hyunuk, Sang-Jin Ahn, and Woo-Sung Jung. "A study on technology forecasting based on co-occurrence network of keyword in multidisciplinary journals." *Journal of the Korean Operations Research and Management Science Society* 40, no. 4 (2015): 49-63. (in Korean)

## WORKING PAPERS

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- Kim, Hyunuk, and Dylan Walker. "A method for mining personal traits in social media." Submitted to the *14th ACM International Conference on Web Search and Data Mining*.
- Kim, Hyunuk, and Dylan Walker. "Homophily and exposure to misinformation."
- Kim, Hyunuk, Young-Ho Eom, Daniel Kim, Hawoong Jeong, Woo-Sung Jung, and Hyejin Youn. "How exploitation and exploration shape the knowledge space."
- Kim, Hyunuk, Marcus J. Hamilton, Yuri E. Berezkin, Woo-Sung Jung, and Hyejin Youn. "The deep structure of narrative motifs shared across human cultures."

## TALKS

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| Data science meets ancient narratives<br><i>IBS/POSTECH joint seminar on data science and complexity in social systems</i> , Republic of Korea                               | Jul 15, 2020 |
| Growing network model for knowledge space: micro to macro views<br><i>Dynamics Days 2019</i> , Evanston, USA   | Jan 04, 2019 |
| Reconstructing technology space from a secret recipe of high impact innovation<br><i>4th Annual International Conference on Computational Social Science</i> , Evanston, USA | Jul 15, 2018 |
| The structure of mythologies explains early human migrations out of Africa<br><i>4th Annual International Conference on Computational Social Science</i> , Evanston, USA     | Jul 13, 2018 |
| Building technology space from microscopic dynamics to macro structure<br><i>Conference on Complex Systems 2017</i> , Cancun, Mexico   | Sep 20, 2017 |
| The structure of mythologies explains the human expansion out of Africa<br><i>Conference on Complex Systems 2017</i> , Cancun, Mexico  | Sep 20, 2017 |
| Measuring the impact of Tesla's open patents on electric vehicle market<br><i>Korean Institute of Industrial Engineers Fall Conference 2016</i> , Seoul, Republic of Korea   | Nov 19, 2016 |
| Fusion of nations, fusion of disciplines: network evolution in nuclear fusion research<br><i>Conference on Complex Systems 2016</i> , Amsterdam, Netherlands                 | Sep 20, 2016 |

## GRANTS & HONORS

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### GRANTS

Global PhD Fellow, National Research Foundation, Republic of Korea ("Evolutionary dynamics of technological innovation." ca. \$50,000)	Mar 2017 – Aug 2019
Nonprofit Startup Incubator Program, Seoul NPO Center, Republic of Korea ("Prisming: Blockchain for in-kind donation." ca. \$4,200)	Jun 2018 – Dec 2018
Creative KISTEP Fellow, KISTEP, Republic of Korea ("Analyzing S&T knowledge structure by community detection in multislice network." ca. \$1,600)	Apr 2017 – Aug 2017

### HONORS

First Prize, PhD Student Research Competition, Department of IME, POSTECH	Jan 2017
Excellence Award, Master's Student Research Competition, KIIE Fall Conference 2016	Nov 2016
Encouraging Paper, SOITMC & Knowledge Cities World Summit 2015	Jun 2015
Asan Young Fellow, Asan Institute for Policy Studies, Republic of Korea	Apr 2013 – Dec 2013

## TEACHING & ADVISING

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### COURSE DEVELOPMENT

Python and Neural Networks, Boston University, USA (with Prof. Dylan Walker, please visit <a href="https://github.com/dylanwalker/BA865">https://github.com/dylanwalker/BA865</a> )	Fall 2019, Winter 2020
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### TEACHING ASSISTANT

Python and Neural Networks, Boston University, USA	Winter 2020
Social Dynamics and Network Analysis – Genius Bar, Northwestern University, USA	Spring 2018, Winter 2019

### ADVISING

Jungmin Kwon, Undergraduate in Physics, POSTECH	2016
Joo Hong Min, Undergraduate in Physics, POSTECH	2016

## REFERENCES

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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](mailto:wsjung@postech.ac.kr)

Dr. Hyejin Youn, *Assistant Professor*  
Management & Organizations Department, Kellogg School of Management  
Northwestern University, Evanston, IL 60208, USA  
[hyejin.youn@kellogg.northwestern.edu](mailto:hyejin.youn@kellogg.northwestern.edu)

Dr. Dylan Walker, *Assistant Professor*  
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