

# Hyunuk Kim

595 Commonwealth Avenue Office 608, Boston, MA 02215, USA

uk@bu.edu | <http://hkim07.github.io>

(Updated on March 18, 2021)

## 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: 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: Hyejin Youn

## 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: 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).

- This paper inspired Twitter to launch *Birdwatch*, a community-driven approach to tackling misinformation

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 multidisciplinarity: 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, Young-Ho Eom, Daniel Kim, Hawoong Jeong, Woo-Sung Jung, and Hyejin Youn. “How exploitation and exploration shape the knowledge space.” (Job market paper) [A full manuscript is available upon request]

Kim, Hyunuk, Marcus J. Hamilton, Yuri E. Berezkin, Woo-Sung Jung, and Hyejin Youn. “The deep structure of narrative motifs shared across human cultures.” [A full manuscript is available upon request]

Kim, Hyunuk, and Dylan Walker. “A method for mining personal traits in social media.” [A full manuscript is available upon request]

Kim, Hyunuk, and Dylan Walker. “Homophily and exposure to misinformation.”

Yoon, Jisung\*, Hyunuk Kim\*, and Woo-Sung Jung. “Assessing the hierarchy of urban dynamics and the impact of external shocks on accommodation business.” (\*equally contributed)

Kim, Munjung, Jisung Yoon, Hyunuk Kim, and Woo-Sung Jung. “Topic diversity of policy research institutes.”

## TALKS

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Data science meets ancient narratives  
*IBS/POSTECH joint seminar on data science and complexity in social systems*, Republic of Korea Jul 15, 2020

Growing network model for knowledge space: micro to macro views  
*Dynamics Days 2019*, Evanston, USA Jan 04, 2019

Reconstructing technology space from a secret recipe of high impact innovation  
*4th Annual International Conference on Computational Social Science*, Evanston, USA Jul 15, 2018

The structure of mythologies explains early human migrations out of Africa  
*4th Annual International Conference on Computational Social Science*, Evanston, USA Jul 13, 2018

Building technology space from microscopic dynamics to macro structure  
*Conference on Complex Systems 2017*, Cancun, Mexico Sep 20, 2017

The structure of mythologies explains the human expansion out of Africa <i>Conference on Complex Systems 2017</i> , Cancun, Mexico	Sep 20, 2017
Measuring the impact of Tesla's open patents on electric vehicle market <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 <i>Conference on Complex Systems 2016</i> , Amsterdam, Netherlands	Sep 20, 2016

## GRANTS & HONORS

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### GRANTS

Global Ph.D. 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, Ph.D. 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 Dylan Walker, please visit <a href="https://github.com/dylanwalker/BA865">https://github.com/dylanwalker/BA865</a> )	Fall 2019, Spring 2020
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### TEACHING ASSISTANT

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

### ADVISING

Jisung Yoon, Ph.D. Candidate in Industrial and Management Engineering, POSTECH	2020 – Present
Munjung Kim, Undergraduate in Physics, POSTECH	2021
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

Dr. Hyejin Youn, *Assistant Professor*

Management & Organizations Department, Kellogg School of Management

Northwestern University, Evanston, IL 60208, USA

hyejin.youn@kellogg.northwestern.edu

Dr. Dylan Walker, *Assistant Professor*

Information Systems Department, Questrom School of Business

Boston University, Boston, MA 02215, USA

dtwalker@bu.edu