

# Hyunuk Kim

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(Updated on March 4, 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.”

Kim, Hyunuk, Marcus J. Hamilton, Yuri E. Berezkin, Woo-Sung Jung, and Hyejin Youn. “The deep structure of narrative motifs shared across human cultures.”

Kim, Hyunuk, and Dylan Walker. “A method for mining personal traits in social media.”

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

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

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

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

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

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| 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

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

### HONORS

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|---|---------------------|
| First Prize, Ph.D. Student Research Competition, Department of IME, POSTECH         | Jan 2017            |
| Excellence Award, Master's Student Research Competition, KIIIE 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

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| Python and Neural Networks, Boston University, USA<br>(with 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

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

### ADVISING

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|--|----------------|
| 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

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Dr. Dylan Walker, *Assistant Professor*

Information Systems Department, Questrom School of Business

Boston University, Boston, MA 02215, USA

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