

# Hyunuk Kim

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## ACADEMIC POSITIONS

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

Postdoctoral Associate, Questrom School of Business  
(affiliated with the Institute for Health System Innovation & Policy)  
Advisor: Prof. Dylan Walker

Aug 2019 – Present

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

Visiting Predoctoral Fellow, Kellogg School of Management  
(affiliated with the Northwestern Institute on Complex Systems)  
Advisor: Prof. Hyejin Youn

Jan 2018 – Jul 2019

### **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  
Advisor: Prof. Woo-Sung Jung  
Dissertation: Collective patterns and dynamics of knowledge creation  
M.S. in Industrial and Management Engineering  
B.S. in Mathematics (minor in Industrial and Management Engineering)

Sep 2016 – Aug 2019

Sep 2014 – Aug 2016

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 (HKS) 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, 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, "Personal traits encoded in publicly available social media posts."

Kim, Hyunuk, and Dylan Walker, "Homophily and exposure to misinformation."

## 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> (online), 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 |
| Predicting future issues with keyword network of national policy research<br><i>SOIImC &amp; Knowledge Cities World Summit 2015</i> , Daegu, Republic of Korea               | Jun 16, 2015 |

## 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, The 12th Master's Student Research Contest, 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 at Kellogg School of Management  
Northwestern University, Evanston, IL 60208, USA  
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Dr. Dylan Walker, *Assistant Professor*  
Information Systems Department at Questrom School of Business  
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