

# Hyunuk Kim

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(Updated on April 19, 2022)

## ACADEMIC POSITIONS

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

Assistant Professor of Administrative Sciences, Metropolitan College  
(Faculty in the Applied Business Analytics program)

Jul 2021 – Present

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

Aug 2019 – Jun 2021

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, career trajectory)

Business Analytics (network science, machine learning, natural language processing)

Innovation (technological change, foresight, artificial intelligence)

Misinformation (social media, healthcare, intervention, spreading dynamics)

## PUBLICATIONS

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Kim, Munjung, Jisung Yoon, Woo-Sung Jung, and Hyunuk Kim. “Quantifying the topic disparity of scientific papers.” In *Companion Proceedings of the Web Conference 2022* (2022).

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 partly inspired Twitter to launch Birdwatch, a community-driven approach to tackling misinformation
- Media coverage: The Communication Initiative Network

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.

- Media coverage: Chosun Biz, Maeil Shinmun, Seoul Traffic Broadcasting System

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, Marcus J. Hamilton, Yuri E. Berezkin, Woo-Sung Jung, and Hyejin Youn. “Deeply nested structure of mythological traditions worldwide.” (Under review in *Science*)

Yoon, Jisung, Woo-Sung Jung, and Hyunuk Kim. “COVID-19 confines recreational gatherings in Seoul to familiar, less crowded, and neighboring urban areas.” (Major revision, *Scientific Reports*, <https://arxiv.org/abs/2109.00902>, Corresponding author)

Kim, Hyunuk, Shulamit Kahn, Alicia Modestino, Bledi Taska, and Dylan Walker. “Estimating the effect of MBA degrees on career trajectories using transformer-based models.”

Kim, Hyunuk, Chris Proctor, Ronan McCarthy, and Dylan Walker. “Understanding the consumption of antimicrobial resistance related content on Social Media.”

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

## TALKS

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Assessing the hierarchy of human urban dynamics and the effect of the external shock  
*Networks 2021 (Online)* Jul 5, 2021

Data-driven representations of scientific specialization and urban resilience  
*Invited Talk*, Department of Geography, University of Hong Kong, Hong Kong Mar 18, 2021

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 <i>Dynamics Days 2019</i> , Evanston, IL, USA	Jan 04, 2019
Reconstructing technology space from a secret recipe of high impact innovation <i>4th Annual International Conference on Computational Social Science</i> , Evanston, IL, USA	Jul 15, 2018
The structure of mythologies explains early human migrations out of Africa <i>4th Annual International Conference on Computational Social Science</i> , Evanston, IL, USA	Jul 13, 2018
Building technology space from microscopic dynamics to macro structure <i>Conference on Complex Systems 2017</i> , 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

Nonprofit Startup Incubator Program, Seoul NPO Center, Republic of Korea ("Prisming: Blockchain for in-kind donation." ca. \$4,000)	Jun 2018 – Dec 2018
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### FELLOWSHIPS

Global Ph.D. Fellow, National Research Foundation, Republic of Korea ("Evolutionary dynamics of technological innovation." ca. \$60,000)	Mar 2017 – Aug 2019
Creative KISTEP Fellow, KISTEP, Republic of Korea ("Analyzing S&T knowledge structure by community detection in multislice network." ca. \$1,500)	Apr 2017 – Aug 2017
Asan Young Fellow, Asan Institute for Policy Studies, Republic of Korea	Apr 2013 – Dec 2013

### 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

## TEACHING & ADVISING

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### TEACHING

Business Analytics Foundations (AD571), Boston University, USA Spring 2022 (Ongoing, 29 Students), Fall 2021 (Instructor Evaluation 4.88/5.00, Response Rate 81% - 17/21 Students)	
Enterprise Risk Analytics (AD616), Boston University, USA Spring 2022 (Ongoing, 45 Students), Fall 2021 (Instructor Evaluation 4.57/5.00, Response Rate 70% - 28/40 Students)	
Data Mining for Business Analytics (AD699), Boston University, USA Spring 2022 (Ongoing, 25 Students)	

## **COURSE DEVELOPMENT**

Python and Neural Networks (BA865), Boston University, USA  
(with Dylan Walker, please visit <https://github.com/dylanwalker/BA865>)

## **ADVISING**

Boston University, USA  
: Taehoon Kim, Yuchen Wang, Yanru Zhou, Jacob Raillon, Haotian Gu, Janani Jayesh, Wenqiang Gao

Pohang University of Science and Technology, Republic of Korea  
: Jisung Yoon, Munjung Kim, Jungmin Kwon, Joo Hong Min

## **REFERENCES**

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Dr. Woo-Sung Jung, *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, *Associate 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, *Associate Professor*  
Argyros School of Business & Economics  
Chapman University, Orange, CA 92866, USA  
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