



Young Jin Kim

Senior Researcher


in Center for Global R&D Data Analysis

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김영진 (in Korean)

RESEARCH INTERESTS

Agentic AI, LLM, RAG, Graph RAG

Bibliography Analysis, Science of Science, Research of Research,

Data Analysis, Machine Learning, Network Analysis,

Game Theory, Social Dilemma, Evolutionary Dynamics, numerical simulation

RESEARCH FUNDING

2025.5.1 - 2025.11.30

Efficiency Enhancement of Research Administration Using Agent-Based Modular AI Systems

EDUCATION

HANYANG UNIVERSITY, Ph.D. in Applied Physics

Mar. 2013 – Aug. 2019

Advisor: Dr. Seung-Woo Son

Thesis: "[Patterns of success and cooperation in complex networks](#)"

HANYANG UNIVERSITY, B.S. in Applied Physics

Mar. 2006 – Feb. 2013

Bachelor of Business Administration (double majors)

Korean military service (Jan. 2008 – Dec. 2009)

EXPERIENCE

Senior Researcher, KISTI, KOREA

Jul. 2023 - present,

Postdoc, KENTECH, KOREA

Apr. 2022 - Jul. 2023,

Postdoc, NIMS, KOREA

Oct. 2019 - Mar. 2022,

Student Researcher, [KISTI](#), KOREA

Mar. 2018 - Aug. 2019

Research Assistant, [HANYANG UNIVERSITY](#), KOREA

Mar. 2015 - Feb. 2018

Teaching Assistant, [HANYANG UNIVERSITY](#), KOREA

Mar. 2013 - Dec. 2014

HONERS & AWARDS

Best award, [2017 fall conference of Korea Academy of Complexity Studies](#) (Seoul, Korea)

Nov. 2017

Best award, [The 8th KIAS CAC Summer School](#) (Seoul, Korea)

Jul. 2017

Competition Award, 4th [Bigcontest](#) (Seoul, Korea)

Oct. 2016

Best award, [2016 NIMS-SKKU Big data Summer School](#) (Jeju, Korea)

Jul. 2016

Best poster award, [The 2015 KPS spring conference](#) (Daejeon, Korea)

Apr. 2015

Scholarly award, College of Science and Technology, Hanyang University

Dec. 2013

Best poster award, The 2013 KPS autumn conference (Changwon, Korea)

Nov. 2013

SPECIALITY & SKILLS

- **Agentic AI & LLM** for data analysis
- **Python** programming language for data analysis, pre-processing, and visualization
- C and C++ programming language for numerical simulations of statistical physics problems and data pre-processing
- Scraping (crawling) for data collecting with python
- Gephi / D3.js for network visualization
- **Make Graph, visualization**, and Presentation (materials): Matplotlib, gnuplot, Powerpoint
- **Management of Linux system** and Windows applications
- **Visualization in Web** using HTML, JS(especially D3.js and Vue.js)
- Amateur Photographer, boxer, music performer (playing guitar and djembe, singing :)

REVIEWED PUBLICATIONS

1. M Im, J Kim, S Ryang, D Kim, W Yi, JM Kim, M Kim, YJ Kim, Y. J. Kim, ...
[“High one-hour plasma glucose is an intermediate risk state and an early predictor of type 2 diabetes in a longitudinal Korean cohort”](#),
 Diabetes Research and Clinical Practice **219**, 111938 (2025)
2. G. Cho*, Y. J. Kim, S. Seo, G. Jang, H. Lee*,
[“Cost-effectiveness analysis of COVID-19 variants effects in an age-structured model”](#),
 Scientific Reports, **13**, 15844, (2023).
3. Y. Seo[^], S. Kim[^], H. S. Lee, J. Park, K. Lee, I. Jun, H. Seo, Y. J. Kim, Y. Yoo, B. C. Choi, H. K. Seok*,
[“Femtosecond Laser Induced Nano-textured Micropatterning to Regulate Cell Functions on Implanted Biomaterials”](#),
 Acta Biomaterialia **116**, 138 (2020).
4. Y. Seo[^], J. Hwang[^], E. Lee, Y. J. Kim, K. Lee, C. Park, Y. Choi, H. Jeon, J. Choi*,
[“Engineering copper nanoparticles synthesized on the surface of carbon nanotubes for anti-microbial and anti-biofilm applications”](#),
 Nanoscale **10**, 15529(2018).
5. Y.-J. Park[^], D. W. Kim, S. H. Nam, Y. J. Kim, S.-W. Son*,
[“Korean Football Stylometry by Using the Football Events Networks”](#),
 New Phys.: Sae Mulli **68**, 642 (2018).
6. Y. J. Kim[^], S. Lim, Y. J. Park, S. W. Son*,
[“Quantitative Analysis of K-Pop Writers' Network by Using K-Pop Lyrics”](#),
 New Phys.: Sae Mulli **68**, 700 (2018).
7. Y.-J. Park[^], Y.-B Kim, S.-Y Jeong, Y. J. Kim, and S.-W. Son*,
[“Network Analysis in Korean Presidential Speeches by Using Word2Vec”](#),
 New Phys.: Sae Mulli **67**, 569(2017).
8. Y. J. Kim[^], M. Roh, S.-Y. Jeong, and S.-W. Son*,
[“Dynamics Motifs of Strategies in Prisoner's Dilemma Games”](#),
 J. Korean Phys. Soc. **65**, 11 (2014) [arXiv:1412.5245](#).
9. Y. J. Kim[^], M. Roh, and S.-W. Son*,
[“Network Structures between Strategies in Iterated Prisoners' Dilemma Games”](#),
 J. Korean Phys. Soc. **64**, 341 (2014) [arXiv:1403.1048](#).
10. Y. J. Kim[^], O. Kwon, H.-S. Song, J. Kim, and H. Kang*,
 “SLR estimation using CEEMDAN near the Korean Peninsula”,
 In preparation (2024).
11. Y. J. Kim[^],
 “Semi-supervised pruning optimization with modularity-based hierarchical clustering”,
 In preparation (2021).

12. Y. J. Kim[^], Y.-J. Park, and S.-W. Son*,
“Effect of the mobility on iterated prisoners’ dilemma game with reputation-based-strategy”,
in preparation (2016).
13. Y. J. Kim[^], Y. Kim, S.-W. Son*, and B. M. Weon*,
“Symmetric distribution in the last digits of the prime numbers”,
in preparation (2015).
14. Y. J. Kim[^], M. Roh, S.-Y. Jeong, and S.-W. Son*,
“Fine phase structures in the payoff space of iterated prisoners’ dilemma games”,
in preparation (2015).

REPORTS (Korean)

1. Y. J. Kim, J. Lee, J. Park
“[KISTI DATA INSIGHT Issue 46: Analysis of National R&D Project Performance Levels According to Funding Categories](#)”
2. J. Yun*, Y. J. Kim,
“[The future of open innovation with GitHub](#)”, KISTI Data Insight, **3**, 1 (2018)

PRESENTATIONS

1. “Keyword Extraction Methodology Using Large Language Model: Multi-layer network analysis of cosmetic patent abstracts” [KPS 2024 Fall Meeting](#) (Yeosu, oral, Oct 23, 2024)
“[A Computational Social Science Approach to K-Beauty Patent Analysis: Focusing on Cultural Trends and Natural Cosmetics](#)” [IC2S2 2025](#) (Norrköping, poster, July 22, 2025)
2. “Unveiling Patterns of Infectious Spread through Empirical Mode Decomposition of Mobile Phone Mobility Data” [KPS 2024 Spring Meeting](#) (Daejeon, oral, April 25, 2024)
3. “Unraveling Researcher Mobility Patterns: A Temporal and Network Analysis Across Global / Regional Connection” [KPS 2024 Spring Meeting](#) (Daejeon, poster, April 24, 2024)
4. “Semi-supervised pruning optimization with modularity-based hierarchical clustering”
[KDISS 2021 Fall Meeting](#) (Seoul, oral, Nov. 26, 2021)
[KSIAM 2021 Winter](#) (Busan, oral, Dec. 2, 2021)
5. “Understanding local differences in the sea-level rise nearby the Korean Peninsula using CEEMDAN”
[KSIAM 2021](#) (Gangneung, oral, Jun. 25, 2021)
[AGU Fall Meeting 2021](#) (New Orleans, poster, Dec. 15, 2021)
6. “Diabetes prediction with KoGES data using Machine Learning”
[KPS 2020 Fall conference](#) (Online, oral, Nov. 6, 2020)
7. “Prediction of sea level rise and volatility analysis near the Korean Peninsula”
[KPS 2020 Spring conference](#) (Online, oral, Jul. 14, 2020)
[KSIAM 2020 Annual Meeting](#) (Jeju, oral, Nov. 12, 2020)
8. “Quantitative analysis of success of repositories in GitHub”
[KPS 2019 Spring conference](#) (Daejeon, oral, Apr. 25, 2019)
[KPS 2018 Fall conference](#) (Changwon, oral, Oct. 26, 2018)
[NetSciX2019](#) (Santiago, Chile, poster, Jan. 4, 2019)
9. “[Quantitative analysis of K-pop writers’ network using K-pop lyrics](#)”,
[NSPCS2018](#) (Seoul, Korea, poster, Jul. 9, 2018)
10. “Network Analysis using K-POP lyrics”,
The 19th Workshop for Statistical Physics (Mungyeong, Korea, Aug. 29, 2017)
KPS 2017 Fall conference (Gyeongju, Korea, poster, Oct. 25, 2017)
2017 fall Korea Academy of Complexity Studies (Seoul, Korea, Nov. 25, 2017)
11. “K-POP genre prediction using CNN”,
The 8th KIAS CAC Summer School (Seoul, Korea, Jul. 5, 2017)
12. “Machine learning based insurance fraud forecast”,
4th Bigcontest, (Seoul, Korea, Competition, Oct. 20, 2016)
13. “Effect of the mobility on iterated prisoners’ dilemma game with reputation-based-strategy”,
NSPCS16 (Seoul, Korea, poster, Jul. 4, 2016)
14. “Composer network using morphological analysis of K-POP lyrics”,

- 2016 NIMS-SKKU MDA-TDA Summer school (Jeju, Korea, oral, Jul. 2, 2016)
15. "Structure of player-interaction networks on iterated prisoners' dilemma game with mobility",
NetSci 2016 (Seoul, Korea, poster, Jun. 1, 2016)
KPS 2016 Spring conference (Daejeon, Korea, poster, Apr. 21, 2016)
 16. "Mobile prisoners' dilemma game with reputation",
KPS 2015 Autumn conference (Gyeongju, Korea, oral, Oct. 22, 2015).
 17. "How does reputation affect spatial prisoners' dilemma game?",
The 18th Workshop for Statistical Physics (Jeonju, Korea, oral, Aug. 21, 2015).
 18. "Network analysis of iterated prisoners' dilemma games with a single step memory",
Granada Seminar on Computational and Statistical Physics (Granada, Spain, June 15, 2015)
 19. "Symmetric distribution in the last digits of prime numbers",
KPS 2015 Spring conference (Daejeon, Korea, poster, Apr. 23, 2015).
 20. "Diverse network structures of strategies in iterated prisoners' dilemma games",
Application of Econophysics and Social Physics : Summer Workshop (Incheon, Korea, oral, Aug. 21, 2014).
 21. "Fine phase structures (Network analysis) of iterated prisoners' dilemma games",
KPS 2014 Spring conference (Daejeon, poster, Apr. 23, 2014).
KIAS 2014 Summer School on Active Systems (Gwangju, oral, June 22 – July 4, 2014).
The 6th Conference on Statistical Physics NSPCS 2014 (Seoul, Korea, poster, July 8 – 11, 2014).
 22. "Analysis of win-lose circulations between strategies in iterated prisoners' dilemma game",
The 17th Workshop for Statistical Physics (Tongyeong, Korea, oral, Oct. 31 – Nov. 3, 2013)
KPS 2013 Autumn conference (Daejeon, poster, Oct. 24, 2013).
 23. "Iterated prisoners' dilemma game with a limited memory",
KPS 2013 Spring conference (Daejeon, poster, Apr. 24, 2013).

REFERENCES

Dr. Seung-Woo Son

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