

Daekyung Lee

daekyung.lee@ascii.ac.at
+43-681-841-81653

Current Position	Supply Chain Intelligence Institute Austria (2024.06 –) Metternichgasse 8, 1030 Vienna, Austria Postdoctoral researcher Research topic: Trade network, Supply chain, Data science
Research interest	Complex network Data analysis Supply chain Transport network Power grid stability Climate network
Publication	<ul style="list-style-type: none">– D. Lee, W. Cho, H. Kim, G. Kim, H.-C. Jeong, B. J. Kim, Self-consistent gravity model for inferring node mass in flow networks, <i>Sci. Rep.</i> 15(1), 18839 (2025).– E. Kim, D. Lee, S. Sakamoto, J.-Y. Jo, M. Vargas, A. Ishizaki, J. Minagawa, H. Kim, Network analysis with quantum dynamics clarifies why photosystem II exploits both chlorophyll <i>a</i> and <i>b</i>, <i>Sci. Adv.</i> 11(19), eads0327 (2025).– W. Jeong, D. Lee, H. Kim, S.-H. Lee, Kaleidoscopic reorganization of network communities across different scales, <i>Phys. Rev. E</i> 111(1), 014312 (2025).– D. Lee, J.-M. Park, H. Kim, E. Lee, Network science approaches for analyzing regional interactions of sea surface temperature, <i>J. Geol. Soc. Korea</i> 60(4), 433–447 (2024).– D. Lee, J.-M. Park, H. Kim, Pseudo-phase difference guides additional connection between oscillators for synchrony, <i>Chaos Solitons Fractals</i> 189, 115617 (2024).– W. Cho, D. Lee, B. J. Kim, A multiresolution framework for the analysis of community structure in international trade networks, <i>Sci. Rep.</i> 13(1), 5721 (2023).– J.-M. Park, D. Lee, H. Kim, How to grow an oscillators' network with enhanced synchronization, <i>Chaos</i> 33, 033137 (2023).– D. Lee, B. J. Kim, Different environmental conditions in genetic algorithm, <i>Physica A</i> 602, 127604 (2022).– D. Lee, S.-H. Lee, B. J. Kim, H. Kim, Consistency landscape of network communities, <i>Phys. Rev. E</i> 103, 052306 (2021).– D. Lee, M. J. Lee, B. J. Kim, Deviation-based spam-filtering method via stochastic approach, <i>EPL</i> 121(6), 68004 (2018).– D. Lee, S. G. Yang, K. Kim, B. J. Kim, Product flow and price change in an agricultural distribution network, <i>Physica A</i> 490, 70–76 (2018).
Education	Sungkyunkwan University, Republic of Korea 2015.03 – 2021.08 Master, Ph.D. joint course, Department of Physics Thesis Topic: Network analysis in various scales Advisor: Beom Jun Kim Research Topics: Complex network, Data analysis
	University of Seoul, Republic of Korea 2010.03 – 2015.03 B.S., Department of Physics
Experience	Europe-Korea Conference on Science and Technology (EKC 2025) 2025.08 Vienna, Austria Local Organizing Committee
	Pukyong National University 2023.12 – 2024.05 Institute of Sustainable Earth and Environmental Dynamics (SEED) 365 Sinseon-ro, Nam-gu, Busan 48547, South Korea

Postdoctoral researcher
Research topic: Network science, Data analysis, Climate dynamics

Korea Institute of Energy Technology 2021.09 – 2023.12
Postdoctoral researcher
Supervisor: Heetae Kim, Department of Energy Technology
Research Topics: Power grid stability, Network science, Biological network

Human Resources Program in Energy Technology 2019.12 – 2020.03
Funded by the Korea Institute of Energy Technology
Local advisor: Heetae Kim (Professor of Data Science Institute, Universidad del Desarrollo)
Research Topic: Power grid stability, Community detection

Invited lecture
Visionary course “Grid,” Korea Institute of Energy Technology 2022.11.24

Awards
Best Oral Presentation 2017
Korean Physical Society Fall Meeting
Grand Prize, Experience Learning Project 2013
University of Seoul

Presentation
Invited seminar

- APCTP, POSTECH (Pohang, South Korea) 2025.05.02
- Pukyong National University (Busan, South Korea) 2025.05.01
- APCTP, POSTECH (Pohang, South Korea) 2023.10.23
- Current Trends in Statistical Physics 2021 (Seoul, South Korea) 2021.11.12
- Urban Engineering Lab, Hongik University (Seoul, South Korea) 2021.10.01

Oral

- Europe-Korea Conference on Science and Technology (Vienna, Austria) 2025.08.27
- NetSci 2025 (Maastricht, Netherlands) 2025.06.07
- Korea Physical Society Spring Meeting (Daejeon, South Korea) 2025.04.23
- Korea Physical Society Spring Meeting (Daejeon, South Korea) 2024.04.25
- Power-net (NetSci 2023 Satellite, Vienna, Austria) 2023.07.10
- Korea Physical Society Spring Meeting (Daejeon, South Korea) 2023.04.21
- Roles of Heterogeneity in Non-equilibrium Collective Dynamics (Japan) 2022.09.16
- Korea Physical Society Spring Meeting (Online, South Korea) 2022.04.20
- Modeling on Ecology and Evolution Seminar (Online, South Korea) 2020.08.25
- Korea Physical Society Fall Meeting (Online, South Korea) 2020.07.14
- Korea Econophysics Workshop (Pohang, South Korea) 2019.08.30
- Workshop for Statistical Physics (Buan-gun, South Korea) 2019.08.21
- Roles of Heterogeneity in Non-equilibrium Collective Dynamics (Japan) 2019.07.15
- Korea Physical Society Spring Meeting (Daejeon, South Korea) 2019.04.26
- Korea Complexity Conference (Seoul, South Korea) 2018.11.10
- Korea Complexity Conference (South Korea) 2017.11.25
- Korea Physical Society Fall Meeting (Gyeongju, South Korea) 2017.10.23
- Workshop for Statistical Physics (Mungyeong, South Korea) 2017.08.29
- Korea Physical Society Fall Meeting (Seoul, South Korea) 2016.10.20

Poster

- New Frontiers in Complex Networks (Busan, Korea) 2023.08.02
- NetSci 2023 (Vienna, Austria) 2023.07.13
- KIAS-KU International Workshop (Seoul, South Korea) 2022.09.25
- Korea Physical Society Spring Meeting (Daejeon, South Korea) 2017.04.20
- STATPHYS 26 (Lyon, France) 2016.07.20

Activity

Teaching Assistant

Classical mechanics Statistical mechanics Machine learning

Research Assistant

- Study of macrodynamics of systems composed of many interacting elements 2019.09 – 2021.03
- Study of emergent properties in social complex systems 2017.03 – 2020.03
- Impact assessment of biological risk factors on agricultural safety with climate changes 2015.04 – 2017.12