

# Daekyung Lee

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

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