

# Daekyung Lee

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- Current Position**      **Supply Chain Intelligence Institute Austria** (2024.06 - )  
Josefstädter Straße 39, 1080 Wien, Österreich  
postdoctoral researcher  
Research topic: Trade network, Supply chain, data science
- Research interest**      Complex network    Data Analysis    Transport network    Power grid stability  
Climate network
- Ongoing Project**
- D. Lee, W. Cho, G. Kim, H. -C. Jeong and B. J. Kim, Self-consistent inference formation of gravity model, arxiv:2106.10025 (in preparation)
  - E. Kim, D. Lee, S. Sakamoto, J. -Y. Jo, M. Vargas, A. Ishizaki, J. Minagawa, H. Kim, Photosystem II network benefits from mixed chlorophylls in the antennae (submitted)
  - D. Lee, J. -M. Park, H. Kim, Optimal link addition to make the synchrony of oscillatory network (Submitted)
  - D. Lee, S. H. Lee, M. J. Lee, S. -W. Son, H. Kim, G. Kim, energy-based approach to the power grid stability (in preparation)
- Publication**
- W Cho, D Lee, B. J. Kim, A multiresolution framework for the analysis of community structure in international trade networks, Sci. Rep. **13** (1) 5721 (2023)
  - J. -M. Park, D. Lee, H. Kim, How to grow an oscillators' network with enhanced synchronization, Chaos, **33** 033137 (2023)
  - D. Lee and B. J. Kim, Different environmental conditions in genetic algorithm, Physica A, **602** 15 (2022)
  - D. Lee, S. H. Lee, B. J. Kim and H. Kim, Consistency landscape of network communities, Phys. Rev. E **103** 052306 (2021)
  - D. Lee, M. J. Lee, B. J. Kim, Deviation-based spam-filtering method via stochastic approach, EPL **121** (6) 68004 (2018)
  - D. Lee, S. G. Yang, K. Kim, B. J. Kim, Product flow and price change in an agricultural distribution network, Physica A **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 Topic: Complex network, Data analysis,
- University of seoul, Republic of Korea**      2010.03 - 2015.03  
*BS*, Department of physics
- Experience**
- 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 Topic: Power grid stability, Network Science, Data analysis, 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

**The grand prize of the Experience Learning Project** 2013

University of Seoul

**Presentation**

**Invited seminar**

- Asia Pacific Center for Theoretical Physics, POSTECH (Pohang, South Korea) 2023.10.23
- Workshop on "Current Trends in Statistical Physics 2021" (Seoul, South Korea) 2021.11.12
- Urban Engineering lab, Hongik University (Seoul, South Korea) 2021.10.01

**Oral**

- Power-net (Netsci 2023 satellite) (Vienna, Austria) 2023.07.10
- Korea Physical Society Spring Meeting 2023 (Daejeon, South Korea) 2023.04.21
- Roles of heterogeneity in non-equilibrium collective dynamics (Japan) 2022.09.16
- Korea Physical Society Spring Meeting 2022 (Online, South Korea) 2022.04.20
- Modeling on Ecology and Evolution seminar (Online, South Korea) 2020.08.25
- Korea Physical Society Fall Meeting 2020 (Online, South Korea) 2020.07.14
- Korea Econophysics workshop (Pohang, South Korea) 2019.08.30
- The 20th Workshop for Statistical Physics (Buan-gun, South Korea) 2019.08.21
- The 20th 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 2019 (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 2017 (Gyeongju, South Korea) 2017.10.23
- The 19th Workshop for Statistical Physics (Mungyeong, South Korea) 2017.08.29
- Korea Physical Society Fall Meeting 2016 (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 2017 (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