

# Ph.D. Youngjai Park

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Tistory Blog : <https://youngjai.tistory.com>

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## Professional Careers

### Postdoctoral Researcher

Mar 2023 – present.

Brain States and Transitions Lab.,  
Center for Neuroscience Imaging Research (CNIR), Republic of Korea

### Postdoctoral Researcher

Mar 2022 – Feb 2023.

Statistical Physics of Ecology and Evolution Dynamics (SPEED) Group,  
Department of Physics, Inha University, Republic of Korea  
Asia Pacific Center for Theoretical Physics (APCTP), Republic of Korea

### Postdoctoral Researcher

Mar 2021 – Feb 2022.

Statistical Physics of Ecology and Evolution Group,  
Asia Pacific Center for Theoretical Physics (APCTP), Republic of Korea

### Visiting Researcher

Aug 2020 – Feb 2021.

Statistical Physics of Ecology and Evolution Group,  
Asia Pacific Center for Theoretical Physics (APCTP), Republic of Korea

### Visiting Researcher

Aug 2018 – Jan 2019.

Complexity Science Group,  
Department of Physics and Astronomy, University of Calgary, Canada

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## Educations

### *Ph.D.* in Applied Physics

Mar 2016 – Feb 2021.

Department of Applied Physics, Hanyang University, Republic of Korea  
Thesis: Network stylometry in complex systems: focused on the motif structures  
Thesis Advisor: Prof. Seung-Woo Son

### *B.Sc.* in Applied Physics

Mar 2010 – Feb 2016.

Department of Applied Physics, Hanyang University, Republic of Korea

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## Grants

### NRF, Postdoctoral Research Program

Sep 2023 – Aug 2026.

Title: Study on transition dynamics of relative phase to investigate conscious/unconscious states in human brain  
Center for Neuroscience Imaging Research, N Center, Republic of Korea

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**NRF - GRA program in Canada**

Aug 2018 – Jan 2019.

Title: Motif dynamics on a growing network model for various open evolving systems

Department of Physics and Astronomy, University of Calgary, Canada

**Hanyang University combined MS/Ph.D. grant**

Mar 2016 – Feb 2019.

Department of Applied Physics, Hanyang University, Republic of Korea

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**Organizing  
Experiences**

- **Modeling on Ecology and Evolution Workshop**, Seoul, Republic of Korea (October 27<sup>th</sup> – 29<sup>th</sup>, 2022). ([link](#))
  - **Workshop about social science and physics**, Deagu, Republic of Korea (November 29<sup>th</sup> – 30<sup>th</sup>, 2021).
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**Relevant Activities****Research & Teaching Assistant**

Mar 2016 – Aug 2018.

Department of Applied Physics, Hanyang University, Republic of Korea

- General Physics Lab. 1
- Computational Physics
- Applications of Computational Physics
- Scientific Analysis and Presentation

**Relevant activity**

Apr 2014 – Aug 2015.

- UST research internships, Korea Electrotechnology Research Institute (KERI) & University of Science and Technology (UST), Republic of Korea (August 2015); KOSAF Working scholarship in KERI (April 2014).

**Korean military service**

Mar 2011 – Dec 2012.

**Trainings**

- 2017 NIMS Study Group with Industry, National Institute for Mathematical Sciences (NIMS) & Innovation Center for Industrial Mathematics (ICIM), Republic of Korea (December, 2017).
  - 16th APCTP Science Communication School, Asia Pacific Center for Theoretical Physics (APCTP), Republic of Korea (February 2017).
  - 2016 Summer Special Lecture, Korea Academy of Complexity Studies (KACS), Republic of Korea (August 2016).
  - 2016 NIMS-SKKU MDA-TDA Summer School, National Institute for Mathematical Sciences (NIMS), Republic of Korea (June 2016).
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**Awards****Awards**

- **Best award**, 2017 KACS autumn conference (November 2017).
  - **Best award**, The 8th KIAS CAC Summer School, Republic of Korea (July 2017).
  - **Excellent Presentation Award**, 16th APCTP Science Communication School, Republic of Korea (February 2017).
  - **Encouragement Prize**, Best Paper Competition commemorating the 2016 International Council on Archives Congress Presidential Archives, Republic of Korea (December 2016).
  - **Best Poster Presentation**, 2016 KPS spring conference, Republic of Korea (April 2016).
  - **Excellence Award**, 2015 Applied Science Capstone Design Competition, Republic of Korea
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## Publications

- **Youngjai Park**, Takashi Shimada, Seung-Woo Son, and Hye Jin Park, “Invasion and Interaction Determine Population Composition in an Open Evolving Ecological System”, *Chaos* **33**, 063151 (2023). ([link](#))
- **Youngjai Park**, Mi Jin Lee, and Seung-Woo Son, “Motif Dynamics in Signed Directional Complex Networks”, *J. Korean Phys. Soc.* **78**, 535 (2021). ([link](#))
- Young Jin Kim, Sohee Lim, **Young-Jai Park**, and Seung-Woo Son, “Quantitative Analysis of K-Pop Writers’ Network by Using K-Pop Lyrics”, *New Physics: Sae Mulli* **68**, 700 (2018). ([link](#))
- **Young-Jai Park** *et al.*, “Korean Football Stylometry by Using the Football Events Networks”, *New Physics: Sae Mulli* **68**, 642 (2018). ([link](#))
- **Young-Jai Park** *et al.*, “Network Analysis in Korean Presidential Speeches by Using Word2Vec”, *New Physics: Sae Mulli* **67**, 569 (2017). ([link](#))

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## Presentations

- **Relative Phase Dynamics of Conscious and Unconscious States in Human Brain**, KSBNS 2023, Busan, Republic of Korea (September 2023); ICBP 2023, Seoul, Republic of Korea (August 2023).
  - **What determines a shape of biomass pyramids**, MEEW 2022, Seoul, Republic of Korea (October 2022); 2022 KPS fall conference, Busan, Republic of Korea (October 2022); RHINO 2022, Tokyo, Japan (September 2022).
  - **Invasion and Interaction determine Population Composition in an Open Evolving System**, Frontiers in Theoretical Biophysics, Gyeongju, Republic of Korea (November 2021); The 21st Statistical Physics Workshop, Online, Republic of Korea (August 2021).
  - **Diversity and Stability on an Open Evolving Network Model**, 2020 KPS fall conference, Online, Republic of Korea (November 2020); 2020 MEE workshop, Online, Republic of Korea (August 2020).
  - **Evolving open system with Lotka-Volterra dynamics**, RHINO 2020, Online, Republic of Korea (August 2020); 2020 KPS spring conference, Online, Republic of Korea (July 2020).
  - **Motif Dynamics on Signed Directed Complex Networks**, 2019 KPS fall conference, Gwangju, Republic of Korea (October, 2019); The 20th Workshop for Statistical Physics, Byeonsan, Republic of Korea (August 2019); 2019 KPS spring conference, Daejeon, Republic of Korea (April 2019); Dynamics Days 2019, Evanston, United States (January 2019).
  - **Football Stylometry with Football Event Network Analysis**, 2017 KACS autumn conference, Seoul, Republic of Korea (November 2017); Korean society of Science & Football, Seoul, Republic of Korea (June 2017).
  - **Motifs dynamics on a network model of evolving open system**, 2017 KPS fall conference, Gyeongju, Republic of Korea (October 2017); The 2nd Workshop on Self-Organization and Robustness of Evolving Many-Body Systems, Sapporo, Japan (September 2017).
  - **Microscopic network structures on a model of evolving open system**, The 19th Workshop for Statistical Physics, Mungyeong, Republic of Korea (August 2017).
  - **Growth conditions on a model of evolving open system**, 2017 KPS spring conference, Daejeon, Republic of Korea (April 2017).
  - **Network analysis in various systems**, Mini-Workshop on Social Modeling and
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Simulation and Hands-on Tutorial of OACIS, Kobe, Japan (March 2017).

- **Network analysis in Korean presidential speeches by using Word2Vec**, 2016 KACS autumn conference, Seoul, Republic of Korea (November 2016); NSPCS16, Hoegi, Republic of Korea (July 2016).
  - **Chronological Changes in the Spoken Word Networks of Korean Presidents**, NetSci2016, Seoul, Republic of Korea (May 2016); 2016 KPS spring conference, Daejeon, Republic of Korea (April 2016).
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