Youngjai Park

Last update: December 28, 2020.

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Educations

Postdoctoral Researcher Expected from March 2021.
Statistical Physics of Ecology and Evolution Group,
Asia Pacific Center for Theoretical Physics (APCTP), Republic of Korea

Integrated Ph. D. Program, Applied Physics March 2016 – February 2021.
Department of Applied Physics, Hanyang University, Republic of Korea
Thesis: Network stylometry in complex systems: focused on the motif structures
Thesis Advisor: Seung-Woo Son

Bachelor of Science, Applied Physics March 2010 – February 2016.
Department of Applied Physics, Hanyang University, Republic of Korea

Research interests and Skills

Research interests

- Motif dynamics on open evolving networks
- Natural language processing and stylometry with Word2Vec
- Development of Lithography tool using Monte Carlo simulation

Skills

- NLP (Natural language processing)
- Programming (C, Python)
- Visualization (Gephi)
- Management of Jupyter/JupyterHub

Experiences

NRF - GRA program in Canada August 2018 – January 2019.
Department of Physics and Astronomy, University of Calgary, Canada

Research & Teaching Assistant March 2016 – August 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 April 2014 – August 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).
  - Understand how gyrtron works and quasi-optical (QO) system.
  - Simulate magnetron injection gun (MIG), which is part of gyrotron, with egun program & Matlab.

Korean military service March 2011 – December 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).

Honors and 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 (November 2015).

Publications

- **Youngjai Park**, Mi Jin Lee, and Seung-Woo Son, Motif Dynamics in Signed Directional Complex Networks, arXiv:2012.06255 (2020).
- **Young-Jai Park** *et al.*, Korean Football Stylometry by Using the Football Events Networks, New Physics: Sae Mulli **68**, 642 (2018).
- 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).
- **Young-Jai Park** *et al.*, Network Analysis in Korean Presidential Speeches by Using Word2Vec, New Physics: Sae Mulli **67**, 569 (2017).
- **Youngjai Park**, Hye Jin Park, and Seung-Woo Son, Diversity and Stability on an Open Evolving Network Model, (in preparation).

Presentations

- **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).
- **Enhanced Approach of Extreme-Ultraviolet Resist Considering Polymer Chain Interaction for Line Edge Roughness Improvement**, SPIE. Advanced Lithography 2019, San Jose, United States (February 2018).
- **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 system**, Mini-Workshop on Social Modeling and 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).