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| **Ph.D. Youngjai Park**  Last update: June 30, 2024. |
| Center for Neuroscience Imaging Research (CNIR), N Center,  16419 Suwon, Republic of Korea  Mobile: +82-10-4505-2835  E-mail: youngjai\_at\_g.skku.edu  Homepage: <https://youngjai.github.io/home>  Tistory Blog : [https://youngjai.tistory.com](https://youngjai.tistory.com/) |
| **Professional Careers** |
| **Postdoctoral Researcher** Mar 2023 – present.  Center for Neuroscience Imaging Research (CNIR), Republic of Korea  **Postdoctoral Researcher** Mar 2021 – 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  **Visiting Researcher** Sep 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 |
| **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 |
| **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  **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 |
| **Organizing Experiences** |
| * **Modeling on Ecology and Evolution Workshop**, Seoul, Republic of Korea (Oct 27th – 29th, 2022). ([link](https://sites.google.com/view/meew2022/home)) * **Workshop about social science and physics**, Deagu, Republic of Korea (Nov 29th – 30th, 2021). |
| **Relevant Activities** |
| **Research & Teaching Assistant**   * KENTECH (Korea Institute of Energy Technology), Republic of Korea Aug 2022 – Dec 2022. * General Physics * Department of Applied Physics, Hanyang University, Republic of Korea Mar 2016 – Aug 2018. * 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 (Aug 2015); KOSAF Working scholarship in KERI (Apr 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 (Dec, 2017). * 16th APCTP Science Communication School, Asia Pacific Center for Theoretical Physics (APCTP), Republic of Korea (Feb 2017). * 2016 Summer Special Lecture, Korea Academy of Complexity Studies (KACS), Republic of Korea (Aug 2016). * 2016 NIMS-SKKU MDA-TDA Summer School, National Institute for Mathematical Sciences (NIMS), Republic of Korea (Jun 2016). |
| **Awards** |
| * **Excellent Poster Award**, 2023 IBS CNIR workshop, Republic of Korea (Dec 2023). * **Best award**, 2017 KACS autumn conference, Republic of Korea (Nov 2017). * **Best award**, The 8th KIAS CAC Summer School, Republic of Korea (Jul 2017). * **Excellent Presentation Award**, 16th APCTP Science Communication School, Republic of Korea (Feb 2017). * **Encouragement Prize**, Best Paper Competition commemorating the 2016 International Council on Archives Congress Presidential Archives, Republic of Korea (Dec 2016). * **Best Poster Presentation**, 2016 KPS spring conference, Republic of Korea (Apr 2016). * **Excellence Award**, 2015 Applied Science Capstone Design Competition, Republic of Korea (Nov 2015). |
| **Publications** |
| 1. **Youngjai Park**, Younghwa Cha, Hyoungkyu Kim, Yukyung Kim, Jae Hyung Woo, and Joon-Young Moon, “Relative Phase Patterns of Human Brain Waves Quantify Brain Dynamics”, (*in preparation*). 2. Yeji Lee, Sujung Park, Hyoungkyu Kim, Jeongmin Kim, Eun Jung Kim, **Youngjai Park**, Uncheol Lee, Jeongwook Kwon, Joon-Young Moon, and Bon-Nyeo Koo, “EEG Correlates of Delayed Emergence after Remimazolam-Induced Anaesthesia Compared to Propofol”, *medRxiv*, 2024.05.17.24307522 (2024). ([link](https://doi.org/10.1101/2024.05.17.24307522)) 3. **Youngjai Park**, Takashi Shimada, Seung-Woo Son, and Hye Jin Park, “Invasion and Interaction Determine Population Composition in an Open Evolving Ecological System”, *Chaos: An Interdisciplinary Journal of Nonlinear Science* **33**, 063151 (2023). ([link](http://doi.org/10.1063/5.0142978)) 4. **Youngjai Park**, Mi Jin Lee, and Seung-Woo Son, “Motif Dynamics in Signed Directional Complex Networks”, *Journal of the Korean Physical. Society* **78**, 535 (2021). ([link](https://doi.org/10.1007/s40042-021-00058-6)) 5. 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](https://doi.org/10.3938/NPSM.68.700)) 6. **Young-Jai Park**, Dong Woo Kim, Seon Ho Nam, Young Jin Kim, and Seung-Woo Son, “Korean Football Stylometry by Using the Football Events Networks”, *New Physics: Sae Mulli* **68**, 642 (2018). ([link](https://doi.org/10.3938/NPSM.68.642)) 7. **Young-Jai Park**, Young-Bin Kim, Seon-Young Jeong, Young Jin Kim, and Seung-Woo Son, “Network Analysis in Korean Presidential Speeches by Using Word2Vec”, *New Physics: Sae Mulli* **67**, 569 (2017). ([link](https://doi.org/10.3938/NPSM.67.569)) |
| **Presentations** |
| * **Understanding synchronization considering both the amplitude and phase of oscillators by utilizing the Stuart-Landau model**, 2024 KPS spring conference, Daejeon, Republic of Korea (Apr 2024). * **How to Detect the Depth of Anesthesia in Human Brain Waves Utilizing Relative Phase Dynamics**, OHBM2024, Seoul, Republic of Korea (Jun 2024); KSCBP 2024, Seoul, Republic of Korea (Feb 2024); The 4th Symposium on Biological Physics, Busan, Republic of Korea (Jan 2024); 2023 IBS CNIR workshop, Suwon, Republic of Korea (Dec 2023); 2023 KPS fall conference, Changwon, Republic of Korea (Oct 2023); KSBNS 2023, Busan, Republic of Korea (Sept 2023); ICBP 2023, Seoul, Republic of Korea (Aug 2023). * **What determines a shape of biomass pyramids**, MEEW 2022, Seoul, Republic of Korea (Oct 2022); 2022 KPS fall conference, Busan, Republic of Korea (Oct 2022); RHINO 2022, Tokyo, Japan (Sept 2022). * **Invasion and Interaction determine Population Composition in an Open Evolving System**, Frontiers in Theoretical Biophysics, Gyeongju, Republic of Korea (Nov 2021); The 21st Statistical Physics Workshop, Online, Republic of Korea (Aug 2021). * **Diversity and Stability on an Open Evolving Network Model**, 2020 KPS fall conference, Online, Republic of Korea (Nov 2020); 2020 MEE workshop, Online, Republic of Korea (Aug 2020). * **Evolving open system with Lotka-Volterra dynamics**, RHINO 2020, Online, Republic of Korea (Aug 2020); 2020 KPS spring conference, Online, Republic of Korea (Jul 2020). * **Motif Dynamics on Signed Directed Complex Networks**, 2019 KPS fall conference, Gwangju, Republic of Korea (Oct, 2019); The 20th Workshop for Statistical Physics, Byeonsan, Republic of Korea (Aug 2019); 2019 KPS spring conference, Daejeon, Republic of Korea (Apr 2019); Dynamics Days 2019, Evanston, United States (Jan 2019). * **Football Stylometry with Football Event Network Analysis**, 2017 KACS autumn conference, Seoul, Republic of Korea (Nov 2017); Korean society of Science & Football, Seoul, Republic of Korea (Jun 2017). * **Motifs dynamics on a network model of evolving open system**, 2017 KPS fall conference, Gyeongju, Republic of Korea (Oct 2017); The 2nd Workshop on Self-Organization and Robustness of Evolving Many-Body Systems, Sapporo, Japan (Sept 2017). * **Microscopic network structures on a model of evolving open system**, The 19th Workshop for Statistical Physics, Mungyeong, Republic of Korea (Aug 2017). * **Growth conditions on a model of evolving open system**, 2017 KPS spring conference, Daejeon, Republic of Korea (Apr 2017). * **Network analysis in various systems**, Mini-Workshop on Social Modeling and Simulation and Hands-on Tutorial of OACIS, Kobe, Japan (Mar 2017). * **Network analysis in Korean presidential speeches by using Word2Vec**, 2016 KACS autumn conference, Seoul, Republic of Korea (Nov 2016); NSPCS16, Hoegi, Republic of Korea (Jul 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 (Apr 2016). |