# Dr.Eng. Sungkyu Shaun Park

CONTACT
INFORMATION

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RESEARCH
INTERESTS

Understanding human behaviors and psychiatric disorders in real world through the lens of large-scale data (e.g., mobile-sensing user logs, online social network logs, and so on)

- Predicting and interpreting the degree of disorders utilizing deep-learning approaches
- Discovering users' unique traits driving the disorders
- Developing customized mobile intervention applications

**Google Scholar**   https://scholar.google.com/citations?user=eXQ8BsMAAAAJ&hl=ko&oi=ao

EDUCATION

**Korea Advanced Institute of Science and Technology (KAIST)**, Daejeon, South Korea

*Ph.D. in Graduate School of Culture Technology*        August 2020

- Thesis Topic: Neural Network-based Learning of Sleep Patterns and Application-driven Interventions
- Advisor: Dr. Meeyoung Cha & Dr. Wonjoon Kim

**Korea Advanced Institute of Science and Technology (KAIST)**, Daejeon, South Korea

*M.S. in Graduate School of Web Science Technology, School of Computing*        August 2014

- Thesis Topic: Exploring Depressive Moods through the Lens of Online Social Behaviors
- Advisor: Dr. Meeyoung Cha

**Sungkyunkwan University (SKKU)**, Suwon, South Korea

*B.S. in Information and Communication Engineering*        February 2009

SELECTED
PUBLICATIONS

M. S. Kim, <u>S. Park</u>, M. Cha, and S. W. Lee. Effects of Child Maltreatment on Physical Activity and Sleep in Healthy Adults: A Wearable Device Use Experiment. *Journal of the Korean Society of Biological Therapies in Psychiatry*, 28(2):74–82, 2022. (Paper in Korean)

<u>S. Park</u>, M. Whiting, M. M. Molaie, H. Chin, S. W. Lee, and M. Cha. Do Differences in National or Political Identity Matter More for Preferences? In *proc. of the $8^{th}$ International Conference on Computational Social Science ($IC^2S^2$)*, 2022. (Extended Abstract, Presented at the poster session)

<u>S. Park</u>, H. Song, S. Han, B. Weldegebriel, L. Manovich, E. Arielli and M. Cha. Using Web Data to Reveal 22-Year History of Sneaker Designs. In *proc. of The Web Conference 2022 (WWW)*, 2022. doi:10.1145/3485447.3512017. *Acceptance rate for full paper = 17.7%*
**[BEST PAPER CANDIDATE (Top 3.4% of the accepted papers)]**

<u>S. Park</u>, H. Song, S. Han, L. Manovich, E. Arielli, and M. Cha. The Shape of Design History: Exploring Evolution of Sneakers Design at Scale Using Neural Embedding. In *proc. of the $7^{th}$ International Conference on Computational Social Science ($IC^2S^2$)*, 2021. (Extended Abstract)

<u>S. Park</u>, S. Han, J. Kim, M. M. Molaie, H. D. Vu, K. Singh, J. Han, W. Lee, and M. Cha. COVID-19 Discourse on Twitter: Case Study of Risk Communication in Four Asian Countries. *Journal of Medical Internet Research (JMIR)*, 03/03/2021:23272, 2021. doi:10.2196/23272. *Impact Factor = 5.03* **[SCIE]**

S. Park, S. Han, S. Kim, D. Kim, **S. Park**, S. Hong, and M. Cha. Improving Unsupervised Image Clustering With Robust Learning. In *proc. of the 2021 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021. *Acceptance rate for full paper ≈ 25%*

**S. Park**, S. W. Lee, D. Ahn, and M. Cha. Designing a Mobile Intervention Platform to Help Alleviate Insomnia Symptoms in College Students. *Journal of the Korean Society of Biological Therapies in Psychiatry*, 27(1):50–58, 2021. (Paper in Korean)

**S. Park**, J. Y. Park, H. Chin, J. Kang, and M. Cha. An Experimental Study to Understand User Experience and Perception Bias Occurred by Fact-checking Messages. In *proc. of The Web Conference 2021 (WWW)*, 2021. doi:10.1145/3442381.3450121. *Acceptance rate for full paper = 20.6%*

**S. Park**, J. Y. Park, J. Kang, and M. Cha. The Presence of Unexpected Biases in Online Fact-checking. *Harvard Kennedy School (HKS) Misinformation Review*, 2021. doi:10.37016/mr-2020-53.

M. Shin, S. Han, **S. Park**, and M. Cha. A Risk Communication Event Detection Model via Contrastive Learning. In *the 3rd Workshop on NLP for Internet Freedom (NLP4IF), co-located with COLING*, accepted for the oral presentation, 2020. (Short paper)

**S. Park**, S. Han, J. Kim, M. M. Molaie, H. D. Vu, K. Singh, J. Han, W. Lee, M. Cha. Risk communication in Asian countries: COVID-19 discourse on Twitter. In *In-depth Stage Sessions and Presentations in the Conference for Truth and Trust Online (TTO),* 2020. (Short paper)

**S. Park**, M. Constantinides, L. M. Aiello, D. Quercia, and P. v. Gent. WellBeat: A Framework for Tracking Daily Well-being Using Smartwatches. *IEEE Internet Computing*, 2020. doi:10.1109/MIC.2020.3017867. *Impact Factor = 4.231* **[SCIE]**

S. Han, S. Park, **S. Park**, S. Kim, and M. Cha. Mitigating Embedding and Class Assignment Mismatch in Unsupervised Image Classification. In *proc. of the 2020 European Conference on Computer Vision (ECCV)*, 2020. *Acceptance rate for full paper = 27.1%*

**S. Park**, S. W. Lee, S. Han, and M. Cha. Clustering Insomnia Patterns by Data from Wearable Devices: Algorithm Development and Validation. *JMIR Mhealth and Uhealth (JMU)*, 2019. doi:10.2196/14473. *Impact Factor = 4.301* **[SCIE]**

**S. Park**, C. T. Li, S. Han, H. Cheng, S. W. Lee, and M. Cha. Learning Sleep Quality from Daily Logs, In *proc. of the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2019. *Acceptance rate for full paper = 14.2%*

**S. Park**, S. W. Lee, and M. Cha. Exploring Insomnia-related Clusters based on Intricate Relationship Among Behavioral, Biological, and Sleeping Data: Focusing on a Smart Band Wearing Experiment, In *proc. of the Korean DataBase Conference (KDBC)*, 2018. (Korean)

**S. Park**, S. W. Lee, and M. Cha. Exploring intricate relationship among behavioral, biological, and sleeping dimensions, In *proc. of the International School and Conference on Network Science (NetSci)*, 2018. (Abstract)

**S. Park**, I. Kim, and M. Cha. Mobile calling patterns are linked to young adults' mental health, In *proc. of the International Workshop on Data and Text Mining in Biomedical Informatics (DTMBIO). CIKM*, 2017. (Short paper)

**S. Park**, J. Park, S. Cho, and J. Won. Approaches to Successful Entry of the Ride-sharing Service for Startups. In *proc. of ACM CHI Conference Extended Abstracts on Human Factors in Computing Systems*, 2017.

S. W. Lee, I. Kim, J. Yoo, **S. Park**, B. Jeong, and M. Cha. Insights from an expressive writing intervention on Facebook to help alleviate depressive symptoms, In Elsevier Computers in Human Behavior, 62: 613-619, 2016. *Impact Factor = 2.694* **[SSCI]**

I. Kim, S. W. Lee, **S. Park**, J. Yoo, M. Cha, and B. Jeong. Designing an expressive writing platform for young adults in Korea. In *proc. of ACM CHI Workshop on HCI and Health*, 2015.

**S. Park**, I. Kim, S. W. Lee, J. Yoo, B. Jeong, and M. Cha. Manifestation of Depression and Loneliness on Social Networks: A Case Study of Young Adults on Facebook. In *proc. of the ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, accepted for the publication, 2015. *Acceptance rate for full paper = 28%*

**S. Park**, S. W. Lee, J. Kwak, M. Cha, and B. Jeong. Activities on Facebook Reveal the Depressive State of Users. *Journal of Medical Internet Research (JMIR)*, 15(10):e217, 2013. doi:10.2196/jmir.2718. *Impact Factor = 4.7* **[SCIE]**

K. Park, J. Park, **S. Park**, J. Kim, S. Kwon, J. Kwak, and M. Cha. Voice of the Employees Resonated in Online Bamboo Forests. In *proc. of the AAAI ICWSM Workshop on Social Computing for Workforce 2.0*, 2013. (Short paper)

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| PATENTS | **S. Park**, S. W. Lee, and J. Won. Method and apparatus for providing insomnia intervention service, South Korea, Patent No. 10-2141804 | July 31, 2020 |
| | J. Park and **S. Park**. Mobile taxi-pooling service companion recommendation method and device using trust networks, South Korea, Patent No. 10-1813779 | December 22, 2017 |
| | J. Park and **S. Park**. Mobile taxi-pooling service charging method and device, South Korea, Patent No. 10-1813780 | December 22, 2017 |
| INVITED TALKS | **Successfully entering the ride-sharing industry: focusing on infrastructure development and service operation**, Uiwang, South Korea | June 13, 2017 |
| | • Hyundai Motor Group | |
| | **Facebook activities reveal the depressive states of users**, Daegu, South Korea | December 13, 2013 |
| | • Daegu Gyeongbuk International Social Network Conference (DISC) 2013 | |
| TEACHING EXPERIENCE | **Kangwon National University** 4471032 – Artificial Intelligence | Fall 2022 |
| | **Kangwon National University** 1410033 – C Programming | Fall 2022 |
| | **Kangwon National University** 1410037 – JAVA Programming Advanced | Fall 2022 |
| | **Kangwon National University** 4471010 – Data Structures | Spring 2022 |
| | **Kangwon National University** 1410036 – JAVA Programming | Spring 2022 |
| | **Kangwon National University** 1410029 – Introduction to Computers | Spring 2022 |
| | **KAIST** GCT576 – Social Computing (Teaching assistant) | Fall 2018 |
| | **KAIST** CS564 – Introduction to Big Data Analytics Using R (Teaching assistant) | Spring 2018 |
| | **Kangnam University** – Youth Career Academy Mentoring: Big Data Expert Course for Senior Undergraduate Students (Instructor & Mentor) | January – February 2016 |

PROFESSIONAL
EXPERIENCE

**Assistant Professor** at Kangwon National University, Chuncheon, South Korea    <u>**March 2022 – Present**</u>
- *Department of Artificial Intelligence Convergence, College of Information Technology (Full-time)*
- Focusing on four research domains: 1) health sciences; 2) text mining; 3) AI theories; 4) cultural analytics

**Postdoctoral Fellowship** at Institute for Basic Science (IBS), Daejeon, South Korea    September 2020 – February 2022
Chief Investigator: Dr. Meeyoung Cha
- *Data Science Group, Center for Mathematical and Computational Sciences (Full-time)*
- Focused on four research domains: 1) mental health; 2) text mining; 3) unsupervised learning; 4) cultural analytics

**Research Intern** at Nokia Bell Labs, Cambridge, United Kingdom    June – August 2019
Department Head: Dr. Daniele Quercia
- *Social Dynamics Team (Full-time)*
- Developed a smartwatch application that can retrieve health signals and self-reported mood data

**Co-founder & Chief Operating Officer** at Kaniza Lab Co., Ltd, Seoul, Korea    March 2015 – January 2017
- *Business Operation and Data Analysis Team (Full-time)*
- Launched and managed two mobile-based on-demand platforms on public transportation domains

**Research Engineer** at Samsung Electronics, Suwon, South Korea    January 2009 – April 2012
Director: Mr. David Yoonwoo Lee
- *Standards Certification Lab. in Business Planning Group at Visual Display Business (Full-time)*
- Dealt with standardization of technical formats on TV and home entertainment products

TECHNICAL
SKILLS

Fluency in quantitative methods: statistics, machine- and deep-learning, social network analysis,
and mobile- and wearable-computing
- Programming: Python, PyTorch, R, JAVA, JavaScript, C, and MATLAB

AWARDS

**Contrastive Neural Topic Model Using Term Weighting**, Outstanding Paper Award    August 2022
at the Conference of Korean Artificial Intelligence Association (CKAIA) 2022

**The sneakers universe**, A digital artwork accepted for the AI × ART contest exhibit    December 2021
held by National Science Museum of South Korea

PROFESSIONAL
SERVICES

**Major Journal Paper Reviews**
- JMIRx-Med, 2021
- Journal of Medical Internet Research (JMIR), 2021
- JMIR Research Protocol, 2021
- EPJ Data Science (EPDS), 2021
- EPJ Data Science (EPDS), 2020
- Journal of Language and Social Psychology (JLSP), 2020

**Major Conference Paper Reviews**
- Conference of the European Chapter of the Association for Computational Linguistics (EACL), 2023
- International World Wide Web Conference (WWW), 2023
- ACM International Conference on Web Search and Data Mining (WSDM), 2023
- Conference on Empirical Methods in Natural Language Processing (EMNLP), 2022
- International World Wide Web Conference (WWW), 2022
- International AAAI Conference on Web and Social Media (ICWSM), 2022
- International World Wide Web Conference (WWW), 2021
- International AAAI Conference on Web and Social Media (ICWSM), 2021

REFERENCES

**Meeyoung Cha, Ph.D.**
*Chief Investigator (CI)* in Data Science Group at Institute for Basic Science (IBS), South Korea
*Associate Professor* in School of Computing at KAIST, South Korea
Email: mcha@ibs.re.kr  (https://ds.ibs.re.kr/ci)

**Daniele Quercia, Ph.D.**
*Department Head* in Social Dynamics at Nokia Bell Labs Cambridge, United Kingdom
*Professor* in Urban Informatics at King's College London, United Kingdom
Email: daniele.quercia@nokia-bell-labs.com  (http://researchswinger.org)

**Cheng-Te Li, Ph.D.**
*Associate Professor* in Institute of Data Science at National Cheng Kung University, Taiwan
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**Bumseok Jeong, M.D., Ph.D.**
*Professor* of Graduate School in Medical Science and Engineering (GSMSE) at KAIST, Korea
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**Sang Won Lee, M.D., Ph.D.**
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