

SUNGJOON PARK

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SUMMARY

I am an applied scientist working on AI systems for healthcare applications. I was previously co-founder and CEO of SoftlyAI. I received my Ph.D. from the School of Computing at KAIST, advised by Alice Oh, where my research was supported by the Google PhD Fellowship program. Prior to that, I obtained my B.A. and M.A. in Psychology from Seoul National University.

RESEARCH INTERESTS

My research has focused on developing machine learning models that understand complex psychological characteristics from text and applying them to computational psychotherapy applications. I believe natural language serves as a powerful indicator of latent psychological states, as our daily language use encodes personality traits and mental states, even at the level of individual words and conversational patterns.

Given the intricate relationship between language and mental state, my earlier work employed carefully designed machine learning models trained on fine-grained data rather than rule-based approaches. My research agenda has encompassed three interconnected areas: (a) Learning Representation of Text, (b) Measuring Psychological Characteristics from Text, and (c) Developing Psychotherapy Applications.

More recently, my interest has expanded to clinical reasoning process modeling, particularly training and employing reasoning models in computational psychotherapy. I am passionate about developing medical intelligence systems that can assist clinical decision-making in real-time and collaborate effectively with healthcare professionals, particularly in mental healthcare and psychiatry.

EDUCATION

- **KAIST**, Ph.D., Computer Science, Mar 2016 – Feb 2022
- **Seoul National University**, M.S., Quantitative Psychology, Mar 2012 – Aug 2014
- **Seoul National University**, B.S., Psychology, Mar 2007 – Feb 2012

WORK EXPERIENCE

- **CEO / Co-founder**, SoftlyAI (Jan 2022 – Present)
- **Research Engineer**, Upstage (Oct 2020 – Oct 2021)

- **Research Intern**, Google Research (July 2020 – Oct 2020)
- **Research Intern**, KakaoBrain (Mar 2020 – July 2020)
- **Research Intern**, Clova AI Research, Naver (Aug 2019 – Feb 2020)
- **Graduate Researcher**, KAIST, U&I Lab (Dec 2014 – Feb 2016)
- **Research Assistant**, SNU Asia Center (Jan 2014 – Aug 2014)

AWARDS & HONORS

- PhD Dissertation Award, Dept. of Computing, KAIST
- Google Ph.D Fellowship, Natural Language Processing, Sep 2019 – Aug 2020

PUBLICATIONS

- [1] Park, K., Baik, M.J., Hwang, Y.J., Shin, Y., Lee, H.J., Lee, R., Lee, S.M., Park, S., et al. (2024). *"Harmful Suicide Content Detection."* arXiv preprint arXiv:2407.13942
- [2] Lee, D.H., Cho, H., Jin, W., Moon, J., Park, S., Röttger, P., Pujara, J., Lee, R.K.W. (2024). *"Improving Covert Toxicity Detection by Retrieving and Generating References."* Proceedings of the 8th Workshop on Online Abuse and Harms (WOAH 2024)
- [3] Shin, J., Yoon, H., Lee, S., Park, S., Liu, Y., Choi, J.D., Lee, S.J. (2023). *"FedTherapist: Mental Health Monitoring with User-Generated Linguistic Expressions on Smartphones via Federated Learning."* Proceedings of EMNLP 2023
- [4] Moon, J., Lee, D.H., Cho, H., Jin, W., Park, C.Y., Kim, M., May, J., Pujara, J., Park, S. (2023). *"Analyzing Norm Violations in Live-Stream Chat."* Proceedings of EMNLP 2023
- [5] Yoon, S., Park, S., Kim, G., Cho, J., Park, K., Kim, G., Seo, M., Oh, A. (2023). *"Towards Standardizing Korean Grammatical Error Correction: Datasets and Annotation."* Proceedings of ACL 2023
- [6] Jeong, Y., Oh, J., Lee, J., Ahn, J., Moon, J., Park, S., Oh, A. (2022). *"KOLD: Korean Offensive Language Dataset."* Proceedings of EMNLP 2022
- [7] Park, S. *, Moon, J. *, Kim, S. *, Cho, W. *, Han, J., et al. (2021). *"KLUE: Korean Language Understanding Evaluation."* NeurIPS 2021 Datasets and Benchmarks Track (*equal contribution)
- [8] Park, S., Kim, J., Ye, S., Jeon, J., Park, H., Oh, A. (2021). *"Dimensional Emotion Detection in Categorical Emotion."* Proceedings of EMNLP 2021
- [9] Park, S. *, Park, K. *, Ahn, J., Oh, A. (2020). *"Suicidal Risk Detection for Military Personnel."* Proceedings of EMNLP 2020 (*equal contribution)
- [10] Park, C., Shin, J., Park, S., Lim, J., Lee, C. (2020). *"Fast End-to-end Coreference Resolution for Korean."* Proceedings of EMNLP 2020 - Findings
- [11] Seonwoo, Y., Park, S., Kim, D., Oh, A. (2019). *"Additive Compositionality of Word Vectors."* Workshop on Noisy User-generated Text (W-NUT) @EMNLP 2019

- [12] Park, S., Park, H., Kim, C. (2019). "A Comparison between Factor Structure and Semantic Representation of Personality Test Items Using Latent Semantic Analysis." *Korean Journal of Cognitive Science*, 30(3)
- [13] Park, S., Kim, D., Oh, A. (2019). "Conversation Model Fine-Tuning for Classifying Client Utterances in Counseling Dialogues." *Proceedings of NAACL 2019*
- [14] Park, S., Seonwoo, Y., Kim, J., Kim, J., Oh, A. (2019). "Denoising Recurrent Neural Networks for Classifying Crash-related Events." *IEEE Transactions of Intelligent Transportation Systems*
- [15] Seonwoo, Y., Park, S., Oh, A. (2018). "Hierarchical Dirichlet Gaussian Marked Hawkes Process for Narrative Reconstruction in Continuous Time Domain." *Proceedings of EMNLP 2018*
- [16] Park, S., Byun, J., Baek, S., Cho, Y., Oh, A. (2018). "Subword-level Word Vector Representations for Korean." *Proceedings of ACL 2018*
- [17] Park, S., Bak, J., Oh, A. (2017). "Rotated Word Vector Representations and their Interpretability." *Proceedings of EMNLP 2017*
- [18] Kim, S., Park, S., Hale, S.A., Kim, S., Byun, J., Oh, A.H. (2016). "Understanding editing behaviors in multilingual Wikipedia." *PLOS ONE*, 11(5), e0155305
- [19] Kim, J., Keegan, B.C., Park, S., Oh, A. (2016). "The Proficiency-Congruency Dilemma: Virtual Team Design and Performance in Multiplayer Online Games." *Proceedings of CHI 2016*
- [20] Park, S., Kim, S., Hale, S.A., Kim, S., Byun, J., Oh, A. (2015). "Multilingual Wikipedia: Editors of Primary Language Contribute to More Complex Articles." *Ninth International AAAI Conference on Web and Social Media (ICWSM 2015)*

TEACHING EXPERIENCE

- SEP592 Special Topics in Software (Introduction to Data Science), KAIST, Head TA, Spring 2019
- CS570 Artificial Intelligence & Machine Learning, KAIST, Head TA, Spring 2017
- CS206 Data Structure, KAIST, TA, Fall 2016
- Advanced Psychological Statistics, Seoul National University, TA, Spring 2013
- Psychological Statistics, Seoul National University, TA, Spring 2012

ACADEMIC SERVICE

- Reviewer: EMNLP 2022, EMNLP 2020, EMNLP 2019, ACL 2019
- Invited Reviewer: WWW 2019
- Subreviewer: EACL 2017

REFERENCES

Prof. Alice Haeyun Oh

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