

Hyewon Willow Han

Neuroscience PhD Student

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Education

University of Western Ontario

PhD in Neuroscience

London, ON, Canada

Jan 2024 – Present

- Neuroscience Graduate Program
- Collaborative Specialization in Machine Learning in Health and Biomedical Sciences

Hongik University

BSc in Engineering

Seoul, Republic of Korea

Mar 2019 – Aug 2023

- Department of Computer Engineering

Research Experience

University of Western Ontario

PhD Student

London, ON, Canada

Jan 2024 – Present

Supervisor: Dr. Yalda Mohsenzadeh

Advisors: Dr. Mark Daley, Dr. Jody Culham

- Thesis research topic: Applying generative neural network models to discovery in cognitive neuroscience

Korea University

Undergraduate Researcher

Seoul, Republic of Korea

Jun 2022 – Jul 2023

Advisor: Dr. Junhyoung Oh

- Developed machine learning models using biomedical data recorded during sleep.
- Collaborated on research to develop novel scoring and classification algorithms for sleep arousal intensity.

Publications

First Author⁺, Corresponding Author^{*}

Journal Articles

H. Han⁺, M. J. Seong⁺, J. Hyeon, E. Joo^{*} and J. Oh^{*}. Classification and automatic scoring of arousal intensity during sleep stages using machine learning. *Scientific Reports*, 14, 5983, 2024.

H. Han⁺, D. Kim, J. S. Kim, L. K. Kwac, J. Hyeon and J. Oh^{*}. A novel sleep aid device to reduce sleep latency using air-CO₂ mixed gas. *Frontiers in Neurology*, 14, 1163904, 2023.

H. Han⁺ and J. Oh^{*}. Application of various machine learning techniques to predict obstructive sleep apnea syndrome severity. *Scientific Reports*, 13, 6379, 2023.

Conference Proceedings

H. W. Han⁺, R. Dhar⁺, Q. Yang⁺, M. Hoseini Behbahani, M. A. Martínez Ortiz, T. S. Oladele, D. C. Dima, H. H. Li^{*}, A. Sogaard^{*} and Y. Mohsenzadeh^{*}. Investigating the role of modality and training objective on representational alignment between transformers and the brain. *Proceedings of the 2nd edition of the Workshop on Unifying Representations in Neural Models*, 2024. (Accepted)

H. Han⁺⁺ and W. Choi. Application of Squeeze-and-Excitation block for improving subject-independent EEG motor imagery classification performance. *Proceedings of the Korea Information Processing Society Conference*, 05a, 517-518, 2023. (written in Korean)

Poster Presentations

H. W. Han⁺, M. Jahanian, J. Cardenas and Y. Mohsenzadeh^{*}. Exploring Brain Responses to Memorability-Controlled Generated Images. *The 7th annual conference on Cognitive Computational Neuroscience*, 2024.

Teaching Experience _____

Teaching Assistant

Fall 2024 CS2211 Software Tools and System Programming, University of Western Ontario
Winter 2024 CS1026 Computer Science Fundamentals I, University of Western Ontario

Skills _____

Programming Python, C/C++, MATLAB, R, SQL, $\LaTeX$

Miscellaneous Git, Bash/Shell, Docker, AWS