

Jaesung Yoo

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Education

Ph.D. Candidate in Neuroscience, University of North Carolina at Chapel Hill 8. 2023 – Present
M.E. Candidate in Electrical Engineering, Korea University 9. 2020 – 2. 2022
GPA: 4.44/4.5, BS-MS integrated program
B.E. in Electrical Engineering, B.S. in Brain and Cognitive Sciences, Korea University 3. 2015 – 8. 2020
GPA: 4.26/4.5, Early graduation, with great honor

Research Experience

University of North Carolina at Chapel Hill, Neuroscience Center 5. 2024 – Present
Advisor: Adam Hantman

- Revealing circuit dysfunction in Angelman syndrome using data-constrained recurrent neural networks

Massachusetts Institute of Technology (MIT), Brain and Cognitive Sciences 7. 2022 – 7. 2023
Advisor: Robert Guangyu Yang

- Publication on dual policy as self-model for planning. Set the in-silico pipeline of the lab.

Seoul National University Hospital, Biomedical Research Institute 2. 2021 – 3. 2022
Advisor: Kwangsoo Kim

- Publications on continual learning, medical AI, and privacy preserving deep learning. Developed ANN trainer library *hideandseek*.

Korea University, Electrical Engineering Department 7. 2020 – 1. 2021
Advisor: Joongheon Kim

- Developed RNN human response model and RL agent for automated propofol infusion.

Korea University, Computer Science Department 9. 2018 – 6. 2020
Advisor: Dongsuk Yook

- Optimized dynamic time warping to be 30% faster. Performed multi-modular GAN experiments for speech applications.

Publications

(*Authors contributed equally)

Journals

Ilhan Yoo*, Jaesung Yoo*, Dongmin Kim, Ina Youn, Hyodong Kim, Michelle Youn, Jun Hee Won, Woosup Cho, Youho Myong, Sehoon Kim, Ri Yu, Sung-Min Kim, Kwangsoo Kim, Seung-Bo Lee, Keewon Kim. Deep Learning Based Algorithm versus Physician Judgement for Diagnosis of Myopathy and Neuropathy from Needle Electromyography. PLOS One (2026). <https://doi.org/10.1371/journal.pone.0339691>
Jaesung Yoo, Sunghyoun Choi, Ye Seul Yang, Suhyeon Kim, Jieun Choi, Dongkyeong Lim, Yaeji Lim, Hyung Joon Joo, Dae Jung Kim, Rae Woong Park, Hyeong-Jin Yoon, Kwangsoo Kim. Review learning: Real world validation of privacy preserving continual learning across medical institutions. Computers in Biology and Medicine (2025). <https://doi.org/10.1016/j.combiomed.2025.110239>
Jaesung Yoo, Fernanda de la Torre, Robert Guangyu Yang. Dual policy as self-model for planning. Journal of Korean

Institute of Intelligent Systems (2024). <https://dx.doi.org/10.5391/JKIS.2024.34.1.15>

Jaesung Yoo^{*}, Ilhan Yoo^{*}, Ina Youn, Sung-Min Kim, Ri Yu, Kwangsoo Kim, Keewon Kim, Seung-Bo Lee. Residual one-dimensional convolutional neural network for neuromuscular disorder classification from needle electromyography signals with explainability. Computer Methods and Programs in Biomedicine (2022). <https://doi.org/10.1016/j.cmpb.2022.107079>

Under Review

Jaesung Yoo, Stefan Lemke, Jian Zhong Guo, Kanaka Rajan, Adam Hantman. A dimensional R2 regression metric. Arxiv (2026). <https://arxiv.org/abs/2605.01066>

Conference Proceedings

Jaesung Yoo, Jeman Park, An Wang, David Mohaisen, Joongheon Kim. On the performance of generative adversarial network (GAN) variants: a clinical data study, Oral presentation at International Conference on ICT Convergence, 2020.

Professional activities

Reviewer

NeurIPS 2026 (Top reviewer), CCN 2025, AAAI 2025 Workshop on GenPlan

Talk:

Good Course Styles for Undergraduates, Invited talk at orientation for new faculty, Korea University, 2019.

Honors and Awards

Top Reviewer, NeurIPS 2026	NeurIPS Foundation	10. 2026
AI/Robotics collaborative research program	Korea University, KIAT	8. 2022 – 3. 2023
• 8 months funding for MIT visiting research		
Gold Paper Award, IEEE Student Paper Contest	IEEE Seoul Section	12. 2019
Young Engineers Honors Society	National Academy of Engineering of Korea	9. 2019 – Present
Korea University Global Research Excursion Program	Korea University	2019
• Full scholarship for Silicon Valley excursion		
National Scholarship for Science and Engineering	Korea Student Aid Foundation	2019
• Full scholarship for 2 years		
Scholarship of Academic Excellence	Korea University	Fall 2015

Teaching & Leadership

International Student Mentor Scholarship	Korea University	3. 2020 – 7. 2021
Linear Algebra Tutor (Best Tutor Award)	Korea University	FA 2018, SP 2019
Honorable Soldier Award, Lead soldier of squadron	Republic of Korea Air Force	8. 2016 – 8. 2018

Skills

Python (pytorch, hydra), LaTeX, Tableau, MATLAB, SQL, Docker, Git, Linux, Notion, Data and Figure visualization