

Jaesung Yoo

✉ jsyoo61@unc.edu |  [jsyoo61](https://github.com/jsyoo61) |  jaesung.tech.blog

Education

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

Research Experience

University of North Carolina at Chapel Hill, Neuroscience Center Advisor: Adam Hantman <ul style="list-style-type: none">Using data-constrained recurrent neural networks for investigating circuit dysfunction in Angelman syndrome	5. 2024 - Present
Massachusetts Institute of Technology (MIT), Brain and Cognitive Sciences Advisor: Robert Guangyu Yang <ul style="list-style-type: none">Publication on dual policy as self-model for planning. Set the in-silico pipeline of the lab.	7. 2022 - 7. 2023
Seoul National University Hospital, Biomedical Research Institute Advisor: Kwangsoo Kim <ul style="list-style-type: none">Publications on continual learning, medical AI, and privacy preserving deep learning. Developed ANN trainer library <i>hideandseek</i>.	2. 2021 - 3. 2022
Korea University, Electrical Engineering Department Advisor: Joongheon Kim <ul style="list-style-type: none">Developed RNN human response model and RL agent for automated propofol infusion.	7. 2020 - 1. 2021
Korea University, Computer Science Department Advisor: Dongsuk Yook <ul style="list-style-type: none">Optimized dynamic time warping to be 30% faster. Performed multi-modular GAN experiments for speech applications.	9. 2018 - 6. 2020

Publications

(^{*}Authors contributed equally)

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, In press (2026). <https://doi.org/10.1101/2023.01.13.23284511>

[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.compbiomed.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.

Presentations

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.

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

Honors and Awards

AI/Robotics collaborative research program	Korea University, KIAT	8. 2022 – 3. 2023
• Full funding for 8 months visiting research at MIT		
International Student Mentor Scholarship	Korea University	3. 2020 – 7. 2021
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	Korea University	3. 2020 – 7. 2021
Linear Algebra Tutor (Best Tutor Award)	Korea University	Fall 2018, Spring 2019
Honorable Soldier Award, Lead soldier of squadron	Republic of Korea Air Force	8. 2016 – 8. 2018

Skills

Scientific Skills

Excellent

Deep Learning
 Reinforcement Learning
 Linear Algebra

Advanced

Visualization
 Signal Processing
 Computer Design

Basic

Electric/Electronic Circuit

Computer Languages

Excellent

Python (pytorch, hydra, etc.),
 Notion

Advanced

Latex, Inkscape, Tableau, Matlab,
 SQL, Docker, Git, Linux

Basic

C, Java, HTML