

Jaesung Yoo

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Education

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

Research Experience

Research Assistant, University of North Carolina at Chapel Hill 5. 2024 – Present
UNC Neuroscience Center, Advisor: Adam Hantman/Kanaka Rajan
Research Assistant, Massachusetts Institute of Technology (MIT) 7. 2022 – 7. 2023
Department of Brain and Cognitive Sciences, Advisor: Robert Guangyu Yang
• Publication on dual policy as self-model for planning. Set the in-silico pipeline of the lab.
Research Assistant, Seoul National University Hospital 2. 2021 – 3. 2022
Biomedical Informatics lab, Advisor: Kwangsoo Kim
• Publications on continual learning, medical AI, and privacy preserving deep learning.
Developed ANN trainer library “hideandseek”.
Research Assistant, Korea University 7. 2020 – 1. 2021
Department of Electrical Engineering, Advisor: Joongheon Kim
• Developed RNN human response model and RL agent for automated propofol infusion.
Research Assistant, Korea University 9. 2018 – 6. 2020
Department of Computer Science, Advisor: Dongsuk Yook
• Optimized vectorized DTW to be 30% faster than existing libraries.
Performed multi-modular GAN experiments for speech processing applications.

Publications

(*Authors contributed equally)

Jaesung Yoo, Sunghyook 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.compbimed.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/JKIIIS.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

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. <https://doi.org/10.1101/2023.01.13.23284511>

Jaesung Yoo^{*}, Sunghyook Choi^{*}, Suhwan Kim, Joongheon Kim, Kwangsoo Kim, Hyung-Jin Yoon. Transfer iterative learning in privacy preserving deep learning: a common data model study.

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.

Department Promotional Video, Korea University school of Electrical Engineering, 2019.

Honors and Awards

<u>AI/Robotics collaborative research program</u>	Korea University, KIAT	8. 2022 – 3. 2023
• Full funding for 8 month 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
<u>Korea University Global Research Excursion Program</u>	Korea University	2019
• Full scholarship for Silicon Valley excursion		
<u>National Scholarship for Science and Engineering</u>	Korea Student Aid Foundation	2019
• Full scholarship for 2 years		
Scholarship of Academic Excellence	Korea University	Fall 2015

Teaching & Leadership

<u>Young Engineers Honors Society</u>	National Academy of Engineering of Korea	9. 2019 – Present
International Student Mentor	Korea University	3. 2020 – 7. 2021
Vice-Captain of Swim Team	Korea University	9. 2019 – 12. 2020
<u>Linear Algebra Tutor (Best Tutor Award)</u>	Korea University	Fall 2018, Spring 2019
Republic of Korea Air Force	South Korea	8. 2016 – 8. 2018
• Honorable Soldier Award of Air Force 2017, Lead soldier of squadron.		

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