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📍 Seoul, South Korea

Jee Seok Yoon

PhD Student @ Korea University



INTERESTS	Generative models and model explainability/interpretability for medical and computer vision	
	Current Interests: <u>Diffusion Model</u> , <u>Domain Generalization</u> , Large Vision-language Models	
EDUCATION	Korea University <i>Ph.D. candidate in Dept. of Brain and Cognitive Engineering</i> <i>Advisor: Professor Heung-Il Suk</i> GPA: 4.18 / 4.5 (96.3 / 100) (Coursework and Qualls Completed)	Seoul, South Korea Sep. 2018 – (<i>Anticipated</i>) Aug. 2025 <small>Started as undergrad intern since sophomore (2016-2018)</small>
	University of British Columbia <i>Visiting Research Student in Dept. of Electrical and Computer Engineering</i> <i>Co-Advisor: Professor Xiaoxiao Li and Professor Heung-Il Suk</i> <i>Research Topic: Diffusion model for medical image synthesis [15]</i>	Vancouver, Canada Aug. 2022 – Aug. 2023
	Korea University <i>Undergraduate in Dept. of Computer Science and Engineering</i>	Seoul, South Korea Mar. 2012 – Aug. 2018
FIVE SELECTED PUBLICATIONS	[15] Jee Seok Yoon* , Chenchao Zhang, Heung-Il Suk, Jia Guo, Xiaoxiao Li, “ <u>SADM: Sequence-Aware Diffusion Model for Longitudinal Medical Image Generation</u> ,” <i>IPMI</i> , 2023 (Paper , Code)	
<i>In order of personal importance</i>	[5] Jee Seok Yoon* , M.C. Roh, and H.-I. Suk, “ <u>A Plug-in Method for Representation Factorization in Connectionist Models</u> ,” <i>IEEE Transactions on Neural Networks and Learning Systems</i> , 2021 (IF 10.451 , paper , code)	
<i>* 1st / Co. 1st Author</i>	[4] K. Oh*, Jee Seok Yoon* , and H.-I. Suk, “ <u>Learn-Explain-Reinforce: Counterfactual Reasoning and Its Guidance to Reinforce an Alzheimer’s Disease Diagnosis Model</u> ,” <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> , 2022 (IF 16.389 , paper , code)	
	[14] Bum-Chae Kim*, Jee Seok Yoon* , Jun-Sik Choi, and Heung-Il Suk, “ <u>Multi-scale Gradual Integration Convolutional Neural Network for False Positive Reduction in Pulmonary Nodule Detection</u> ,” <i>Neural Networks</i> , 2019 (IF 8.050 , paper , code)	
	[21] Jee Seok Yoon* , Kwanseok Oh, Yooseung Shin, Maciej A. Mazurowski, Heung-Il Suk, “ <u>Domain Generalization for Medical Image Analysis: A Survey</u> ,” <i>arXiv</i> , 2023. (Paper , submitted to PIEEE)	
EXPERIENCE	Kakao Enterprise (AI Laboratory) <i>Research Intern</i> - Developed a diffusion model for natural/medical image synthesis (partial work for [15])	Pangyo, Gyeonggi, South Korea Mar. 2021 – Sep. 2021
	SK Telecom <i>Teaching Assistant</i> - Taught TensorFlow and PyTorch to employees of SK Group ranging from experts to beginners	Eulji-ro, Seoul, South Korea Sep. 2017 – Sep. 2020
	Kakao Corp. (Computer Vision Team) <i>Research Intern</i> - Mainly focused on meta-learning and few-shot learning (produced [5])	Pangyo, Gyeonggi, South Korea Jun. 2018 – Aug. 2018
	Venture Company <i>Co-founder, CTO, Backend Developer</i> - Developed the backend for a mobile dating service (currently out of business...!)	Anam, Seoul, South Korea Mar. 2013 – May. 2014
SKILLS	Python : 8+ years of daily use of Tensorflow and PyTorch (+ Very rusty on Java, C#, C++) HPC : Experience with AWS, GCP, SLURM, PBS (+ I’m in charge of our lab’s GPU clusters) Dataset : Few-shot [5], 1D (signal) [7], 2D [16], 3D [14], 4D (3D+time) [15] English Proficiency : 9Y+ Overseas Education, TOEIC Speaking 180/200[Outdated: TOEFL 111/120, TOEIC 980/990]	

PROJECTS

CHALLENGE	SEGMENTATION	9th place in Ischemic Stroke Lesion Segmentation Challenge 2016 (Official Leaderboard , [20]) 10th place in Brain Tumor Image Segmentation Challenge 2016 ([26], [27], unofficial)
	DETECTION	4th place in Lung Nodule Analysis 2016 (Official Leaderboard , under the name <i>MILAB</i> , [14])
APPLICATIONS	LCD CRACK	Carrot Insurance PhoneCare LCD Insurance
	DETECTION	Developed smartphone LCD crack detector (News)
	FIBROSIS	SmartCareworks Inc. GoCDSS
	DIAGNOSIS	Fully automated liver, spleen segmentation and liver fibrosis diagnosis system (News , [13])

Participated as the main/1st contributor in the listed projects

AWARDS & HONORS

International Research Grant (\$34,000+\$5,000) Korea University	Seoul, South Korea Aug., Dec. 2022
Naver Ph.D. Fellowship (\$4,600) Naver Corp. (Link)	Seoul, South Korea Dec. 2021
Research Scholarship (\$1,700) Korea University (Link)	Seoul, South Korea Oct. 2021
Junior Fellow Research Grant (\$2,500) Korea University (Link)	Seoul, South Korea Jul. 2021
Fundamental Scientist Scholarship (\$22,000) JW Foundation (Link , about)	Seoul, South Korea Jan. 2021
Student Travel Award (\$1,000) Medical Image Computing and Computer Assisted Intervention Conference (MICCAI, link , about)	Quebec, Canada Sep. 2017
Best Paper Award Korean Institute of Information Scientists and Engineers (KIISE) Korea Computer Congress (KCC, link)	Jeju Island, South Korea Jun. 2017
Best Undergraduate Student Paper Award Korean Institute of Information Scientists and Engineers (KIISE) Winter Conference (Link , code)	Pyeongchang, South Korea Dec. 2016

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PUBLICATIONS

* 1st / Co. 1st Author

TYPE	#	ROLE	PUBLICATIONS
JOURNAL	[1]		A. W. Mulyadi, W. Jung, K. Oh, Jee Seok Yoon , K. H. Lee, and H.-I. Suk, "Estimating Explainable Alzheimer's Disease Likelihood Map via Clinically-guided Prototype Learning," <i>NeuroImage</i> , 2023 (IF 7.4 , Paper , code)
	[2]		J.Y. Choi, S.S. Lee, N.Y. Kim, H.J. Park, Y.S. Sung, Y. Lee, Jee Seok Yoon , and H.-I. Suk, "The Effect of Hepatic Steatosis on Liver Volume Determined by Proton Density Fat Fraction and Deep Learning–Measured Liver Volume," <i>European Radiology</i> , 2023 (IF 7.034 , Paper)
	[3]		Heo, S., Lee, S.S., Kim, S.Y., Lim, Y.S., Park, H.J., Jee Seok Yoon , Suk, H.I., Sung, Y.S., Park, B. and Lee, J.S., " Prediction of Decompensation and Death in Advanced

Chronic Liver Disease Using Deep Learning Analysis of Gadoteric Acid-Enhanced MRI,” *Korean Journal of Radiology*, 2022. (**IF 3.179**, [paper](#))

- [4] Co. 1ST K. Oh*, **Jee Seok Yoon***, and H.-I. Suk, “Learn-Explain-Reinforce: Counterfactual Reasoning and Its Guidance to Reinforce an Alzheimer’s Disease Diagnosis Model,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2022 (**IF 16.389**, [paper](#), [code](#))
- [5] 1ST **Jee Seok Yoon***, M.C. Roh, and H.-I. Suk, “A Plug-in Method for Representation Factorization in Connectionist Models,” *IEEE Transactions on Neural Networks and Learning Systems*, 2022(**IF 10.451**, [paper](#), [code](#))
- [6] Co. 1ST H.J. Park*, **Jee Seok Yoon***, S.S. Lee, H.-I. Suk, B. Park, Y.S. Sung, S.B. Hong, H. Ryu, “Deep Learning-Based Assessment of Functional Liver Capacity Using Gadoteric Acid-Enhanced Hepatobiliary Phase Magnetic Resonance Imaging,” *Korean Journal of Radiology*, 2022 (**IF 3.179**, [paper](#))
- [7] W. Ko, E. Jeon, **Jee Seok Yoon**, and H.-I. Suk, “Semi-Supervised Generative and Discriminative Adversarial Learning for Motor Imagery-based Brain-Computer Interface,” *Scientific Reports*, 2022 (**IF 4.380**, [paper](#), [code](#))
- [8] S.S. Lee*, R. Park, Y.S. Sung, **Jee Seok Yoon**, H.-I. Suk, H.J. Kim, and S.H. Choi, “Accuracy and efficiency of right-lobe graft weight estimation using deep learning-assisted CT volumetry for living donor liver transplantation,” *Diagnostics*, 2022 (**IF 3.706**, [paper](#))
- [9] E. Jeon*, W. Ko, **Jee Seok Yoon**, and H.-I. Suk, “Mutual Information-driven Subject-invariant and Class-relevant Deep Representation Learning in BCI,” *IEEE Transactions on Neural Networks and Learning Systems*, 2021 (**IF 10.451**, [paper](#))
- [10] D.W. Kim*, J. Ha*, S. Lee, J.H. Kwon, N.Y. Kim, Y. Sung, **Jee Seok Yoon**, H.-I. Suk, Y. Lee, and B.-K. Kang, “Population-based and Personalized Reference Intervals for Liver and Spleen Volumes in healthy individuals and those with viral hepatitis,” *Radiology*, Vol. 301, No. 2, 2021 (**IF 11.105**, [paper](#))
- [11] J.H. Kwon, S.S. Lee, **Jee Seok Yoon**, H.-I. Suk, Y.S. Sung, H.S. Kim, C. Lee, K.M. Kim, S.J. Lee, and S.Y. Kim, “Liver-to-Spleen Volume Ratio Automatically Measured on CT Predicts Decompensation in Patients with B Viral Compensated Cirrhosis,” *Korean Journal of Radiology*, 2021 (**IF 3.179**, [paper](#))
- [12] C. Lee*, S.S. Lee, W.-M. Choi, K.M. Kim, Y.S. Sung, S. Lee, S.J. Lee, **Jee Seok Yoon**, and H.-I. Suk, “An index based on deep learning-measured spleen volume on CT for the assessment of high-risk varix in B-viral compensated cirrhosis,” *European Radiology*, Vol. 31, No. 5, pp. 3355-3365, 2020 (**IF 5.315**, [paper](#))
- [13] Co. 1ST Y. Ahn*, **Jee Seok Yoon***, S. Lee, H.-I. Suk, J. Son, Y. Sung, Y. Lee, B.-K. Kang, and H. Kim, “Deep Learning Algorithm for Automated Segmentation and Volume Measurement of the Liver and Spleen Using Portal Venous Phase Computed Tomography Images,” *Korean Journal of Radiology*, Vol. 21, No. 8, pp. 987-997, 2020 (**IF 3.179**, [paper](#))
- [14] Co. 1ST Bum-Chae Kim*, **Jee Seok Yoon***, Jun-Sik Choi, and Heung-Il Suk, “Multi-scale Gradual Integration Convolutional Neural Network for False Positive Reduction in Pulmonary Nodule Detection,” *Neural Networks*, Vol. 115, pp. 1-10, 2019. (**IF 8.050**, [paper](#), [code](#))

- [15] 1ST **Jee Seok Yoon***, Chenghao Zhang, Heung-Il Suk, Jia Guo, Xiaoxiao Li, “SADM: Sequence-Aware Diffusion Model for Longitudinal Medical Image Generation,” *IPMI*, 2023 ([Paper](#), [Code](#))
- [16] A. W. Mulyadi*, W. Jung, K. Oh, **Jee Seok Yoon**, and H.-I. Suk, “Clinically-guided Prototype Learning and Its Use for Explanation in Alzheimer’s Disease Identification,” *Medical Imaging meets NeurIPS*, 2022. ([Paper](#), [code](#), [link](#), oral)

INTERNATIONAL CONFERENCE	[17]	1 ST	Jee Seok Yoon* , Wonjun Ko, and Heung-Il Suk, “ <u>A Plug-in Factorizer for Disentangling a Latent Representation</u> ,” Proc. of 1 st <i>ICCV Workshop on Interpreting and Explaining Visual Artificial Intelligence Models</i> , Seoul, South Korea, 2019 (Poster Spotlight , link)
	[18]		Wonjun Ko*, Jee Seok Yoon , and Heung-Il Suk, “ <u>Towards Reducing Calibration in BCI: Artificial EEGs Generation by Deep Learning</u> ,” Proc. of 7 th <i>International Brain-Computer Interface Meeting</i> , Pacific Grove, USA, 2018. (Student Award , Poster, link , paper)
	[19]		Wonjun Ko*, Jee Seok Yoon , Eun-song Kang, Eunji Jun, Jun-Sik Choi, and Heung-Il Suk, “ <u>Deep Recurrent Spatio-Temporal Neural Network for Motor Imagery based BCI</u> ,” Proc. of 6 th <i>IEEE International Winter Conference on Brain-Computer Interface</i> , High1 Resort, Korea, 2018. (Poster, paper)
	[20]	1 ST	Jee Seok Yoon* , Eun-Song Kang, and Heung-Il Suk, “ <u>Gated Two-Stage Convolutional Neural Network for Ischemic Stroke Lesion Segmentation</u> ,” Proc. of 3 rd <i>MICCAI Workshop on Ischemic Stroke Lesion Segmentation Challenge (ISLES)</i> , Quebec, Canada, 2017. (Student Travel Award , poster, paper)
PREPRINTS	[21]	1 ST	Jee Seok Yoon* , Kwanseok Oh, Yooseung Shin, Maciej A. Mazurowski, Heung-Il Suk, “ <u>Domain Generalization for Medical Image Analysis: A Survey</u> ,” <i>arXiv</i> , 2023. (Paper , submitted to <i>Proceedings of the IEEE</i>)
	[22]		Ahmad Wisnu Mulyadi, Wonsik Jung, Kwanseok Oh, Jee Seok Yoon , Heung-Il Suk, “ <u>XADLiME: eXplainable Alzheimer's Disease Likelihood Map Estimation via Clinically-guided Prototype Learning</u> ,” <i>arXiv</i> , 2022. (Paper)
	[23]	Co. 1 ST	Kwanseok Oh*, Jee Seok Yoon* , Heung-Il Suk, “ <u>Born Identity Network: Multi-way Counterfactual Map Generation to Explain a Classifier's Decision</u> ,” <i>arXiv</i> , 2020. (Paper)
BOOK/ CHAPTERS	[24]		Ahmad Wisnu Mulyadi, Jee Seok Yoon , Eunjin Jeon, Wonjun Ko, Heung-Il Suk, “ <u>Chapter 1 - An introduction to neural networks and deep learning</u> ”, <i>Deep Learning for Medical Image Analysis (Second Edition)</i> , 2024 (Book , chapter)
DOMESTIC CONFERENCE	[25]		Ahmad Wisnu Mulyadi, Wonsik Jung, Kwanseok Oh, Jee Seok Yoon , and Heung-Il Suk, “ <u>Topological-aware Prototype Learning for Estimating Explainable Alzheimer’s Disease Likelihood Map</u> ,” Proc. of 2023 <i>KIISE Winter Conference, 2023</i> (Oral)
	[26]	1 ST	Jee Seok Yoon* and Heung-Il Suk, “ <u>Auto-context Bagging for Brain Tumor Automatic Segmentation</u> ,” Proc. of 2017 <i>KIISE Korea Computer Congress (KCC)</i> , 2017 (Best Paper Award , oral, link , paper)
	[27]	1 ST	Jee Seok Yoon* and Heung-Il Suk, “ <u>Deep Learning-based Brain Tumor Segmentation from Multi-modal MRI</u> ,” Proc. of 2016 <i>KIISE Winter Conference</i> , 2016 (Best Paper Award , poster, link , paper , code)
DOMESTIC PATENT	[28]		Jee Seok Yoon and Heung-Il Suk*, “ <u>A Method and Device for Explainable Few-shot Image Classification</u> ,” Korean Patent, No. 10-2316678, 19 Oct. 2021 (Link)
DOMESTIC ARTICLE	[29]	1 ST	Jee Seok Yoon* and Heung-Il Suk, “ <u>AI-based Computer Vision Uses in Kakao Corp.</u> ,” Communications of the Korean Institute of Information Scientists and Engineers, Vol. 37, No. 2, pp. 52-55, Feb 2019 (Link)

Thank you for your interest.

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