

Hyungjin Chung

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Research interests Deep Learning, Inverse problems, Computational Imaging, MR reconstruction

Education

KAIST	Daejeon, Korea
PhD in Bio & Brain Engineering	2021.03 – Present
Advisor: Professors Jong Chul Ye	

KAIST	Daejeon, Korea
MA in Bio & Brain Engineering	2019.03 – 2021.02
Thesis: TomoGAN: Unsupervised Learning-based Reconstruction of Tomography	
Advisor: Professors Jong Chul Ye	

Korea University	Seoul, Korea
BA in Biomedical Engineering	2015.03 – 2019.02

Honors and scholarships

KAIST Scholarship	2021.02 - Present
Korea Government Scholarship	2019.03 - 2021.02

Professional memberships

Advisory board member	2021.05 – Present
SNUH Rad-AICON: SNUH-Radiology AI Collaboration Network	

Publications

Missing Cone Artifacts Removal in ODT using Unsupervised Deep Learning in Projection Domain
[Hyungjin Chung](#)^{*}, Jaeyoung Huh^{*}, Geon Kim, Yong Keun Park, Jong Chul Ye
IEEE Transactions on Computational Imaging

Two-Stage Deep Learning for Accelerated 3D Time-of-Flight MRA without Matched Training Data
[Hyungjin Chung](#), Eunju Cha, Leonard Sunwoo, Jong Chul Ye
Medical Image Analysis, 2021.

Deep learning STEM-EDX tomography of nanocrystals
Yoseob Han^{*}, Jaeduck Jang^{*}, Eunju Cha^{*}, Junho Lee^{*}, [Hyungjin Chung](#)^{*},
Myoungcho Jeong, Tae-Gon Kim, Byeong Gyu Chae, Hee Goo Kim, Shinae Jun,
Sungwoo Hwang, Eunha Lee, Jong Chul Ye
Nature Machine Intelligence, 2021. (***First author**)

Selected as 2021 March Issue Cover

Unpaired training of deep learning tMRA for flexible spatio-temporal resolution

Eunju Cha, [Hyungjin Chung](#), Eung Yeop Kim, Jong Chul Ye.

IEEE Transactions on Medical Imaging, 2020.

Unpaired deep learning for accelerated MRI using optimal transport driven cycleGAN

Gyutaek Oh, Byeongsu Sim, [Hyungjin Chung](#), Leonard Sunwoo, Jong Chul Ye.

IEEE Transactions on Computational Imaging, 2020.

Preprints

Simultaneous super-resolution and motion artifact removal in diffusion-weighted MRI using unsupervised deep learning

[Hyungjin Chung](#), Jaehyun Kim, Jeong Hee Yoon, Jeong Min Lee, Jong Chul Ye

arXiv preprint arXiv:2105.00240

Feature Disentanglement in generating three-dimensional structure from two-dimensional slice with sliceGAN

[Hyungjin Chung](#), Jong Chul Ye

arXiv preprint arXiv:2105.00194

A Deep Learning Model for Diagnosing Gastric Mucosal Lesions Using Endoscopic Images: Development, Validation, and Method Comparison

Joon Yeul Nam*, [Hyungjin Chung](#)*, Kyu Sung Choi*, Hyuk Lee*,
Seung Jun Han, Tae Jun Kim, Hosim Soh, Eun Kang, Soo-Jeong Cho,
Jong Chul Ye, Jong Pil Im, Sang Gyun Kim, Yoon Jun Kim, Joo Sung Kim, Jung-
Hwan Yoon, Hyunsoo Chung, Jeong-Hoon Lee

RSSN (*First author)

International
Conference

Deep learning fast MRI using channel attention in magnitude domain

Joonhyung Lee*, Hyunjong Kim*, [Hyungjin Chung](#)*, Jong Chul Ye

IEEE International Symposium on Biomedical Imaging, 2020.

(*First author)

Unsupervised Merge-Residual Learning for Time-of-Flight MRI

[Hyungjin Chung](#), Eunju Cha, Leonard Sunwoo, Jong Chul Ye

IEEE International Symposium on Biomedical Imaging Workshop, 2020.

Patent

Unsupervised deep learning method for tomography for complete removal of missing cone artifact and apparatus therefore

Jong Chul Ye, [Hyungjin Chung](#), JaeYoung Huh

Korea patent application, 2020.

Two-Stage unsupervised learning method for 3D Time-of-flight MRA reconstruction and the apparatus therefore

Jong Chul Ye, [Hyungjin Chung](#), Eunju Cha, Leonard Sunwoo

Korea patent application, 2020.

Research experience

Unsupervised deep learning for compressed sensing MRI reconstruction

KAIST 2020.04 – 2021.02

Research project conducted in collaboration with Seoul National University Bundang Hospital.

Deep learning-based performance prediction of deep learning

KAIST 2020.03 – 2021.02

Project presented in VRPGP 2020

Development of reconstruction algorithm of STEM-EDX tomography

Samsung Electronics 2019.12 – 2020.11

Teaching experience

Head Teaching assistant, KAIST Fall 2021

BiS 800: Machine Learning for Medical Image Analysis

Teaching assistant, KAIST Spring 2021

BiS 301: Bioengineering Laboratory I

Teaching assistant, KAIST Fall 2020

BiS 452: Biomedical Imaging

Teaching assistant, KAIST Spring 2020

BiS 400, MAS 480 : Advanced Intelligence

Teaching assistant, KAIST Fall 2019

BiS 452: Biomedical Imaging

Teaching assistant, KAIST Spring 2020

BiS 301, : Bioengineering Laboratory I

Skills

Deep Learning Framework

PyTorch, Tensorflow, JAX

Computational Imaging

MRI, ODT, Microscopy, Phase Retrieval, etc

Programming

Python, MATLAB, C++.