

# Yohan Jun

POSTDOCTORAL RESEARCH FELLOW, PH.D.

Athinoula A. Martinos Center for Biomedical Imaging, Bldg 149 13th St Rm 2301, Charlestown MA 02129

☎ 1-(617)-309-9938 | ✉ yjun@mgh.harvard.edu | 🏠 yohan-jun.github.io | <https://scholar.google.com/citations?user=rSICtLYAAAAJ&hl=en>

## Research Interests

<b>Machine/Deep Learning</b>	Inverse Problem, Image Reconstruction, Self-Supervised/Zero-Shot Learning
<b>Magnetic Resonance Imaging</b>	Fast Magnetic Resonance Imaging (MRI), Image Reconstruction, Rapid Quantitative Mapping
<b>Deep Learning for Automatic Diagnosis</b>	Automatic Detection, Segmentation, and Diagnosis using Medical Images

## Education

### Yonsei University

PH.D. IN ELECTRICAL & ELECTRONIC ENGINEERING

Seoul, S.Korea

Mar. 2016 - Feb. 2022

- **Thesis:** "Model-based Deep Learning Reconstruction Methods for Fast Magnetic Resonance Imaging"
- **Scholarship:** Brain Korea 21 Plus Outstanding Student Fellow Scholarship of Korea Research Foundation

### Yonsei University

B.S. IN ELECTRICAL & ELECTRONIC ENGINEERING

Seoul, S.Korea

Mar. 2012 - Feb. 2016

- **Scholarship:** National Scholarship for Science & Engineering of Korea Student Aid Foundation

## Research Experience

### Athinoula A. Martinos Center for Biomedical Imaging

RESEARCH FELLOW @ ATHINOULA A. MARTINOS CENTER FOR BIOMEDICAL IMAGING, MASSACHUSETTS GENERAL HOSPITAL (MGH), AND HARVARD MEDICAL SCHOOL (HMS), **ADVISOR: PROF. BERKIN BILGIC, PROF. MICHAEL GEE**

Boston, US

Mar. 2022 - Now

- **Accelerating Quantitative MRI**
  1. **Subspace Reconstruction for Multiparametric Mapping:**
    - Developed a zero-shot deep subspace reconstruction network (**Zero-DeepSub**) for fast multiparametric quantitative MRI.
  2. **Rapid Quantitative MRI:**
    - Developed a self-supervised learning scheme for multiparametric mapping using QALAS (**SSL-QALAS**).
- **Rapid and Motion-Robust Fetal and Pediatric Imaging**
  - **Fast Quantitative/Synthetic Imaging:** Developing a fast and motion-robust quantitative and synthetic fetal/pediatric MR imaging.

### Yonsei University

RESEARCH ASSISTANT @ MEDICAL ARTIFICIAL INTELLIGENCE LAB, **ADVISOR: PROF. DOSIK HWANG**

Seoul, S.Korea

Jan. 2016 - Feb. 2022

- **Accelerating MR Imaging with Deep Learning Techniques**
  1. **Accelerating MRI:**
    - Developed a joint deep model-based MR image and coil sensitivity reconstruction network (**Joint-ICNet**) for fast MRI.
    - Validated domain-transform manifold learning in phase-encoding direction for accelerating cartesian MRI (**DOTA-MRI**).
    - Implemented cross-domain CNNs (**KIKI-net**) for reconstructing undersampled MR images.
  2. **Rapid MR Parameter Mapping:** Developed a deep model-based MR parameter mapping network (**DOPAMINE**) for a fast T1 mapping.
  3. **Parallel Imaging in TOF-MRA:** Developed a deep multistream CNNs (**DPI-net**) for parallel imaging in TOF-MRA.
- **Computer-aided Diagnosis (CAD) for Brain Tumors**
  1. **Metastasis:** Developed a deep learning model for automatic detection and segmentation of brain metastases.
  2. **Meningioma:** Implemented meningioma segmentation and grading models using two-stage deep learning models.
  3. **Glioblastoma:** Developed an automatic deep-learning-based segmentation model for glioblastoma analysis.
- **MRI Applications**
  1. **Standardization of Quantitative MRI:** Developed a deep-learning-based model for standardization of MOLLI T1 mapping.
  2. **Increasing MRI SNR:** Analyzed a denoising method based on tissue characteristics for High-SNR multiple T2(\*)-contrast MRI.
  3. **MRI-compatible Sensor:** Validated a megahertz-wave-transmitting conducting polymer electrode (MRI-compatible pressure sensor).

### Philips Korea

INTERNSHIP

Seoul, S.Korea

Oct. 2017 - Dec. 2017

- Intern (Medical Image Generation using Deep Learning Algorithms)

## Philips Korea & Gyrotools

### COURSE CERTIFICATE

- Philips Pulse Programming Course

Seoul, S.Korea

Sep. 25-30. 2017

## Teaching Experience

### Yonsei University

GUEST LECTURER, TEACHING ASSISTANT

- **Introduction Artificial Intelligence**
  - Presented a lecture on principles of deep learning and convolutional neural networks

GUEST LECTURER, TEACHING ASSISTANT

- **Medical Imaging Artificial Intelligence**
  - Presented a lecture on MR image reconstruction using deep learning methods

GUEST LECTURER, TEACHING ASSISTANT

- **Medical Artificial Intelligence**
  - Presented a lecture on principles of MRI and reconstruction methods for fast MRI

TEACHING ASSISTANT

- **Introduction to Bioengineering for Electrical and Electronic Engineering**

TEACHING ASSISTANT

- **Electrical and Electronic Engineering Capstone Design**

Seoul, S.Korea

Sep. 2021 - Dec. 2021

Mar. 2021 - Jun. 2021

Sep. 2020 - Dec. 2020

Mar. 2018 - Jun. 2018

Mar. 2017 - Jun. 2017

## Honors & Awards

### INTERNATIONAL

2022-2023 **Distinguished Reviewer**, IEEE Transactions on Medical Imaging (IEEE TMI)

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|------|-------------------------------------------------------------------------------------------------------------------|--------------------|
| 2023 | <b>ISMRM Summa Cum Laude</b> , The ISMRM 31st Annual Meeting                                                      | Toronto, Canada    |
| 2021 | <b>1st Rank</b> , Cross-Modality Domain Adaptation for Medical Image Segmentation (crossMoDA-2021 challenge)      | Virtual Conference |
| 2021 | <b>ISMRM Magna Cum Laude (1)</b> , The ISMRM 29th Annual Meeting                                                  | Virtual Conference |
| 2021 | <b>ISMRM Magna Cum Laude (2)</b> , The ISMRM 29th Annual Meeting                                                  | Virtual Conference |
| 2020 | <b>3rd Rank</b> , fastMRI Challenge 2020, Facebook AI Research & NYU Langone Health                               | Virtual Conference |
| 2020 | <b>ISMRM Summa Cum Laude</b> , The ISMRM 28th Annual Meeting                                                      | Virtual Conference |
| 2020 | <b>ISMRM The Poster Award of 2nd Place (Silver)</b> , 2020 ISMRM Workshop on Data Sampling & Image Reconstruction | Sedona, US         |
| 2019 | <b>4th Rank</b> , fastMRI Challenge 2019, Facebook AI Research & NYU Langone Health                               | Vancouver, Canada  |
| 2017 | <b>ISMRM Summa Cum Laude</b> , The ISMRM 25th Annual Meeting                                                      | Hawaii, US         |

### DOMESTIC

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|------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 2021 | <b>Excellence Award</b> , Medical Artificial Intelligence Datathon 2021, Ministry of Science and ICT and National Information Society Agency | Seoul, S.Korea |
| 2021 | <b>Excellence Award</b> , Hackathon of Development of AI-based Image Diagnosis using Medical Big Data 2021, Korea Testing Laboratory (KTL)   | Seoul, S.Korea |
| 2021 | <b>Best Paper Award</b> , Graduate Student Paper Award, Yonsei University                                                                    | Seoul, S.Korea |
| 2019 | <b>Participation Prize</b> , Samsung Humantech Paper Award (first author)                                                                    | Seoul, S.Korea |
| 2019 | <b>1st Rank and Grand Prize</b> , HeLP Challenge 2018, Brain Tumor Segmentation Contest                                                      | Seoul, S.Korea |
| 2018 | <b>Participation Prize</b> , Samsung Humantech Paper Award (co-author)                                                                       | Seoul, S.Korea |
| 2017 | <b>Grand Prize</b> , Yonsei Junior Convergence Science                                                                                       | Seoul, S.Korea |

## Scholarship

2023	<b>ISMRM Trainee Stipend</b> , ISMRM Workshop on Data Sampling and Image Reconstruction	US
2021	<b>Dissertation Fellowship</b> , Graduate Students Idea Incubation Fund, Yonsei University	S.Korea
2021	<b>Academy Research Fellowship</b> , Graduate Students Idea Incubation Fund, Yonsei University	S.Korea
2021	<b>Best Paper Award Scholarship</b> , Graduate Student Paper Award, Yonsei University	S.Korea
2020	<b>ISMRM Trainee Stipend</b> , ISMRM Workshop on Data Sampling and Image Reconstruction	US
2017-2019	<b>ISMRM Educational Stipend</b> , ISMRM	US
2019	<b>Brain Korea 21 Plus Outstanding Student Fellow Scholarship</b> , Korea Research Foundation	S.Korea
2018	<b>Teaching Assistant Scholarship</b> , Yonsei Univeristy	S.Korea
2017-2020	<b>Brain Korea 21 Plus Scholarship</b> , Korea Research Foundation	S.Korea
2016	<b>Research Assistant Scholarship</b> , Yonsei Univeristy	S.Korea
2012-2015	<b>National Scholarship for Science &amp; Engineering</b> , Korea Student Aid Foundation	S.Korea

## Invited Talks

<b>Self-Supervised Learning for Rapid Quantitative MRI</b>	Boston, US
ATHINOULA A. MARTINOS CENTER FOR BIOMEDICAL IMAGING	May. 2023
• Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital	
<b>Deep Model-based MR Parameter Mapping Network (DOPAMINE) for Fast MR Reconstruction</b>	Seoul, S.Korea
34TH KSIIM CONFERENCE, 2020	Oct. 2020
• Korean Society of Imaging Informatics in Medicine	
<b>Medical Imaging Research using Artificial Intelligence</b>	Seoul, S.Korea
HUFS AIM LAB, 2020	Jan. 2020
• The Catholic University of Korea, Eunpyeong St. Mary's Hospital	

## Presented Talks

<b>Zero-DeepSub: Zero-Shot Deep Subspace Reconstruction for Multiparametric Quantitative MRI Using QALAS</b>	Toronto, Canada
ISMRM ANNUAL MEETING, 2023	June. 2023
• International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, 2023	
<b>Deep Subspace Reconstruction with Zero-Shot Learning for Multiparametric Quantitative MRI</b>	Sedona, US
ISMRM WORKSHOP ON DATA SAMPLING AND IMAGE RECONSTRUCTION, 2023	Jan. 2023
• International Society for Magnetic Resonance in Medicine (ISMRM) on Data Sampling and Image Reconstruction, 2023	
<b>Joint Reconstruction of MR Image and Coil Sensitivity Maps using Deep Model-based Network</b>	Virtual Conference
ISMRM ANNUAL MEETING, 2021	May. 2021
• International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, 2021	
<b>Deep Learning-based Automatic Detection and Segmentation of Brain Metastases Using Multi-Task Learning with 3D Black-Blood and GRE Imaging</b>	Virtual Conference
ISMRM ANNUAL MEETING, 2021	May. 2021
• International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, 2021	
<b>Deep Model-based MR Parameter Mapping Network (DOPAMINE) for Fast MR Reconstruction</b>	Virtual Conference
ISMRM ANNUAL MEETING, 2020	Aug. 2020
• International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, 2020	
<b>Deep Convolutional Neural Network for Acceleration of Magnetic Resonance Angiography (MRA)</b>	Hawaii, US
ISMRM ANNUAL MEETING, 2017	Apr. 2017
• International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, 2017	

## Publications - Preprints

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### Improved Multi-Shot Diffusion-Weighted MRI with Zero-Shot Self-Supervised Learning Reconstruction

2023

J CHO, Y JUN, X WANG, C KOBAYASHI, B BILGIC

• *arXiv preprint arXiv:2308.05103*

### Zero-DeepSub: Zero-Shot Deep Subspace Reconstruction for Rapid Multiparametric Quantitative MRI Using 3D-QALAS

2023

Y JUN, Y AREFEEN, J CHO, S FUJITA, X WANG, PE GRANT, B GAGOSKI, C JAIMES, MS GEE\*, B BILGIC\*

• *arXiv preprint arXiv:2307.01410*

### SDC-UDA: Volumetric Unsupervised Domain Adaptation Framework for Slice-Direction Continuous Cross-Modality Medical Image Segmentation

2023

H SHIN, H KIM, S KIM, Y JUN, T EO, D HWANG

• *arXiv preprint arXiv:2305.11012*

### SSL-QALAS: Self-Supervised Learning for Rapid Multiparameter Estimation in Quantitative MRI Using 3D-QALAS

2023

Y JUN, J CHO, X WANG, M GEE, PE GRANT, B BILGIC\*, B GAGOSKI\*

• *arXiv preprint arXiv:2302.14240*

### COSMOS: Cross-Modality Unsupervised Domain Adaptation for 3D Medical Image Segmentation based on Target-aware Domain Translation and Iterative Self-Training

2022

H SHIN, H KIM, S KIM, Y JUN, T EO, D HWANG

• *arXiv preprint arXiv:2203.16557*

### Self-Training Based Unsupervised Cross-Modality Domain Adaptation for Vestibular Schwannoma and Cochlea Segmentation

2021

H SHIN, H KIM, S KIM, Y JUN, T EO, D HWANG

• *arXiv preprint arXiv:2109.10674*

### Results of the 2020 fastMRI Challenge for Machine Learning MR Image Reconstruction

2020

MJ MUCKLEY, B RIEMENSCHNEIDER, ..., Y JUN, H SHIN, D HWANG, ..., FLORIAN KNOLL

• *arXiv preprint arXiv:2012.06318*

## Publications - Peer-Review Journal

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### Zero-DeepSub: Zero-Shot Deep Subspace Reconstruction for Rapid Multiparametric Quantitative MRI Using 3D-QALAS

2023

Y JUN, Y AREFEEN, J CHO, S FUJITA, X WANG, PE GRANT, B GAGOSKI, C JAIMES, MS GEE\*, B BILGIC\*

• (Under Revision)

### SSL-QALAS: Self-Supervised Learning for Rapid Multiparameter Estimation in Quantitative MRI Using 3D-QALAS

2023

Y JUN, J CHO, X WANG, M GEE, PE GRANT, B BILGIC\*, B GAGOSKI\*

• *Magnetic Resonance in Medicine*, 90(5):2019-2032

### Deep learning referral suggestion and tumour discrimination using explainable artificial intelligence applied to multiparametric MRI

2023

H SHIN, JE PARK, Y JUN, T EO, J LEE, JE KIM, DH LEE, HH MOON, SI PARK, S KIM, D HWANG, HS KIM

• *European Radiology*, 33:5859-5870

### Intelligent Noninvasive Meningioma Grading with a Fully Automatic Segmentation using Interpretable Multiparametric Deep Learning

2023

Y JUN\*, YW PARK\*, H SHIN\*, Y SHIN, JR LEE, K HAN, SS AHN, SM LIM, D HWANG, SK LEE

• \*Co-first Authors, *European Radiology*, 33:6124-6133

### Ultrathin crystalline-silicon-based strain gauges with deep learning algorithms for silent speech interfaces

2022

T KIM\*, Y SHIN\*, K KANG\*, K KIM\*, G KIM\*, Y BYEON\*, ..., JR LEE, G SON, T KIM, Y JUN, ..., HG KANG, D HWANG, KJ YU

• *Nature Communications*, 13:5815

<b>Results of the 2020 fastMRI Challenge for Machine Learning MR Image Reconstruction</b> MJ MUCKLEY*, B RIEMENSCHNEIDER*, ..., <b>Y JUN</b> , H SHIN, D HWANG, ..., FLORIAN KNOLL • <i>IEEE Transactions on Medical Imaging</i> , 40(9):2306-2317	2021
<b>Deep model-based magnetic resonance parameter mapping network (DOPAMINE) for fast T1 mapping using variable flip angle method</b> <b>Y JUN</b> , H SHIN, T EO, T KIM, D HWANG • <i>Medical Image Analysis</i> , 70:102017	2021
<b>Robust performance of deep learning for automatic detection and segmentation of brain metastases using three-dimensional black-blood and three-dimensional gradient echo imaging</b> YW PARK*, <b>Y JUN</b> *, Y LEE, K HAN, C AN, SS AHN, D HWANG, SK LEE • <i>*Co-first Authors, European Radiology</i> , 31:6686-6695	2021
<b>The Latest Trends in Attention Mechanisms and Their Application in Medical Imaging</b> H SHIN, J LEE, T EO, <b>Y JUN</b> , S KIM, D HWANG • <i>Journal of the Korean Society of Radiology</i> , 81(6):1305-1333	2020
<b>Accelerating Cartesian MRI by domain-transform manifold learning in phase-encoding direction</b> T EO*, H SHIN*, <b>Y JUN</b> , T KIM, D HWANG • <i>Medical Image Analysis</i> , 63:101689	2020
<b>Parallel imaging in time-of-flight magnetic resonance angiography using deep multistream convolutional neural networks</b> <b>Y JUN</b> , T EO, H SHIN, T KIM, HJ LEE, D HWANG • <i>Magnetic Resonance in Medicine</i> , 81(6):3840-3853	2019
<b>Megahertz-wave-transmitting conducting polymer electrode for device-to-device integration</b> T KIM, G KIM, H KIM, HJ YOON, T KIM, <b>Y JUN</b> , TH SHIN, S KANG, J CHEON, D HWANG, BW MIN, W SHIM • <i>Nature Communications</i> , 10:653	2019
<b>Deep-learned 3D black-blood imaging using automatic labelling technique and 3D convolutional neural networks for detecting metastatic brain tumors</b> <b>Y JUN</b> , T EO, T KIM, H SHIN, D HWANG, SH BAE, YW PARK, HJ LEE, BW CHOI, SS AHN • <i>Scientific Reports</i> , 8:9450	2018
<b>KIKI-net: cross-domain convolutional neural networks for reconstructing undersampled magnetic resonance images</b> T EO, <b>Y JUN</b> , T KIM, J JANG, HJ LEE, D HWANG • <i>Magnetic Resonance in Medicine</i> , 80(5):2188-2201	2018
<b>High-SNR multiple T2 (*)-contrast magnetic resonance imaging using a robust denoising method based on tissue characteristics</b> T EO, T KIM, <b>Y JUN</b> , H LEE, SS AHN, DH KIM, D HWANG • <i>Journal of Magnetic Resonance Imaging</i> , 45(6):1835-1845	2017

## Publications - Conference Papers

<b>Improved Multi-Shot Diffusion-Weighted MRI with Zero-Shot Self-Supervised Learning Reconstruction</b> J CHO, <b>Y JUN</b> , X WANG, C KOBAYASHI, B BILGIC • <i>International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)</i> , pp.457-466	2023
<b>SDC-UDA: Volumetric Unsupervised Domain Adaptation Framework for Slice-Direction Continuous Cross-Modality Medical Image Segmentation</b> H SHIN, H KIM, S KIM, <b>Y JUN</b> , T EO, D HWANG • <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , pp.7412-7421	2023

## Evaluation of the Robustness of Learned MR Image Reconstruction to Systematic Deviations Between Training and Test Data for the Models from the fastMRI Challenge

2021

PM JOHNSON, ..., H SHIN, Y JUN, T EO, S KIM, T KIM, D HWANG, ..., F KNOLL

- *International Workshop on Machine Learning for Medical Image Reconstruction (MLMIR)*, pp. 25-34

## Joint Deep Model-based MR Image and Coil Sensitivity Reconstruction Network (Joint-ICNet) for Fast MRI

2021

Y JUN, H SHIN, T EO, D HWANG

- *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 5266-5275

## Translation of 1D Inverse Fourier Transform of K-space to an Image Based on Deep Learning for Accelerating Magnetic Resonance Imaging

2018

T EO, H SHIN, T KIM, Y JUN, D HWANG

- *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, pp. 241-249

## Publications - Conference Abstracts

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### Zero-DeepSub: Zero-Shot Deep Subspace Reconstruction for Multiparametric Quantitative MRI Using QALAS

2023

Y JUN, Y AREFEEN, J CHO, X WANG, M GEE, B GAGOSKI, B BILGIC

- [**\*Oral Presentation**] [**\*Summa Cum Laude**] *International Society for Magnetic Resonance in Medicine (ISMRM)*

### SSL-QALAS: Self-Supervised Learning for Multiparametric Quantitative MRI Using QALAS

2023

Y JUN, J CHO, X WANG, M GEE, PE GRANT, B BILGIC, B GAGOSKI

- *International Society for Magnetic Resonance in Medicine (ISMRM)*

### Improved T1 and T2 mapping in 3D-QALAS using temporal subspaces and Cramer-Rao-bound flip angle optimization enabled by auto-differentiation

2023

Y AREFEEN, Y JUN, B GAGOSKI, B BILGIC, E ADALSTEINSSON

- [**\*Oral Presentation**] *International Society for Magnetic Resonance in Medicine (ISMRM)*

### Self-Supervised Deep Learning Reconstruction for Highly Accelerated Diffusion Imaging

2023

A VURANKAYA, Y JUN, J CHO, B BILGIC

- [**\*Oral Presentation**] *International Society for Magnetic Resonance in Medicine (ISMRM)*

### Model-based phase-difference reconstruction for accelerated phase-based T2 mapping

2023

X WANG, J CHO, Y JUN, B GAGOSKI, B BILGIC

- *International Society for Magnetic Resonance in Medicine (ISMRM)*

### VUDU-SAGE: Efficient T2 and T2\* Mapping using Joint Reconstruction for Motion-Robust, Distortion-Free, Multi-Shot, Multi-Echo EPI

2023

J CHO, TH KIM, AJL BERMAN, Y JUN, X WANG, B GAGOSKI, B BILGIC

- *International Society for Magnetic Resonance in Medicine (ISMRM)*

### Deep Subspace Reconstruction with Zero-Shot Learning for Multiparametric Quantitative MRI

2023

Y JUN, Y AREFEEN, J CHO, X WANG, M GEE, B GAGOSKI, B BILGIC

- [**\*Oral Presentation**] *International Society for Magnetic Resonance in Medicine (ISMRM) Workshop on Data Sampling and Image Reconstruction*

### Improved T1 and T2 Mapping in 3D-QALAS Using Temporal Subspaces and Flip Angle Optimization Enabled by Auto-Differentiation

2023

Y AREFEEN, B GAGOSKI, Y JUN, B BILGIC, E ADALSTEINSSON

- *International Society for Magnetic Resonance in Medicine (ISMRM) Workshop on Data Sampling and Image Reconstruction*

### Model-Based Phase-Difference Reconstruction for Accelerated Phase-Based T2 Mapping

2023

X WANG, J CHO, Y JUN, B GAGOSKI, B BILGIC

- *International Society for Magnetic Resonance in Medicine (ISMRM) Workshop on Data Sampling and Image Reconstruction*

### VUDU-SAGE: Efficient T2 and T2\* Mapping Using Joint Reconstruction for Motion-Robust, Distortion-Free, Multi-Shot, Multi-Echo EPI

2023

J CHO, TH KIM, AJL BERMAN, Y JUN, X WANG, B GAGOSKI, B BILGIC

- *International Society for Magnetic Resonance in Medicine (ISMRM) Workshop on Data Sampling and Image Reconstruction*

<b>Interpretable Meningioma Grading and Segmentation with Multiparametric Deep Learning</b> <u>Y JUN*</u> , YW PARK*, H SHIN, Y SHIN, JR LEE, K HAN, SM LIM, SK LEE, SS AHN, D HWANG • <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 3064	2022
<b>Joint Generation of Multi-contrast Magnetic Resonance Images and Segmentation Map Using StyleGAN2-based Generative Network</b> G SON, T EO, <u>Y JUN</u> , H SHIN, D HWANG • [ <b>*Oral Presentation</b> ], <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 0102	2022
<b>Arbitrary Missing Contrast Generation Using Multi-Contrast Generative Network with An Encoder Network</b> G SON, <u>Y JUN</u> , S KIM, D HWANG, T EO • <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 4308	2022
<b>Deep residual network with data consistency for subsampled Fourier ptychographic microscopy</b> HG KIM, KW KIM, KC LEE, TJ EO, K LEE, <u>Y JUN</u> , SA LEE, D HWANG • <i>Quantitative Phase Imaging VIII</i> , p. PC119700B. SPIE	2022
<b>Deep Learning-based Automatic Detection and Segmentation of Brain Metastases Using Multi-Task Learning with 3D Black-Blood and GRE Imaging</b> <u>Y JUN*</u> , YW PARK*, Y LEE, K HAN, C AN, SK LEE, SS AHN, D HWANG • [ <b>*Oral Presentation</b> ] [ <b>*Magna Cum Laude</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 0662	2021
<b>Joint Reconstruction of MR Image and Coil Sensitivity Maps using Deep Model-based Network</b> <u>Y JUN</u> , H SHIN, T EO, D HWANG • [ <b>*Oral Presentation</b> ] [ <b>*Magna Cum Laude</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 0206	2021
<b>Results of the 2020 fastMRI Brain Reconstruction Challenge</b> B RIEMENSCHNEIDER, ..., <u>Y JUN</u> , H SHIN, D HWANG, F KNOLL • [ <b>*Oral Presentation</b> ] [ <b>*Summa Cum Laude</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 0063	2021
<b>Explainable And Fully Automated Clinical Referral Suggestion For Mass Like Lesions In The Brain Using Multi-contrast MRI</b> H SHIN, JE PARK, <u>Y JUN</u> , HS KIM, D HWANG • <i>Radiological Society of North America (RSNA)</i> , pp. SDP-NR-16	2021
<b>Deep Model-based MR Parameter Mapping Network (DOPAMINE) for Fast MR Reconstruction</b> <u>Y JUN</u> , H SHIN, T EO, T KIM, D HWANG • [ <b>*Oral Presentation</b> ] [ <b>*Summa Cum Laude</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 0988	2020
<b>Deep Model-Based Network for Fast MR Parameter Map Reconstruction</b> <u>Y JUN</u> , H SHIN, T EO, T KIM, D HWANG • [ <b>*Poster Award</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM) Workshop on Data Sampling and Image Reconstruction</i>	2020
<b>Parallel Imaging in Time-of-Flight Magnetic Resonance Angiography Using Deep Multi-Stream Convolutional Neural Networks</b> <u>Y JUN</u> , T EO, H SHIN, T KIM, H LEE, D HWANG • <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 4659	2019
<b>Parallel Imaging based on k-x Domain Interpolation using Deep Neural Networks</b> H SHIN, T EO, <u>Y JUN</u> , T KIM, H LEE, D HWANG • <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 4660	2019
<b>Deep-learned 3D black-blood imaging using automatic labeling technique and 3D convolutional neural networks for detection of metastatic brain tumors</b> <u>Y JUN</u> , T EO, T KIM, H SHIN, D HWANG, S BAE, Y PARK, H LEE, B CHOI, S AHN • <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 4857	2018



<b>Brain Vessel Extraction without MRA / V using Deep Convolutional Neural Network</b>	2018
H SHIN, <u>Y JUN</u> , T KIM, T EO, S AHN, D HWANG	
• <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 3171	
<b>Automatic Selection of Optimal Regularization Parameters in Compressed Sensing using No Reference Magnetic Resonance Image Quality Assessment</b>	2018
K BANG, J JANG, <u>Y JUN</u> , H JANG, H LEE, D HWANG	
• <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 2816	
<b>Deep Sinogram Learning for Radial MRI: Comparison with k-space and Image Learning</b>	2018
T KIM, T EO, D PARK, <u>Y JUN</u> , D HWANG	
• <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 2799	
<b>Reconstruction of brain vessel signals from undersampled time-of-flight magnetic resonance angiography using deep learning</b>	2018
<u>Y JUN</u> , T EO, H SHIN, T KIM, HJ LEE, H JANG, D HWANG	
• <i>The 21th Annual Meeting of the the Korean Society for Brain and Neural Sciences (KSBNS)</i> , pp. 1097	
<b>Deep Convolutional Neural Network for Acceleration of Magnetic Resonance Angiography (MRA)</b>	2017
<u>Y JUN</u> , T EO, T KIM, J JANG, D HWANG	
• [ <b>*Oral Presentation</b> ] [ <b>*Summa Cum Laude</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> , pp. 0686	
<b>Cascaded Convolutional Neural Network (CNN) for Reconstruction of Undersampled Magnetic Resonance (MR) Images</b>	2017
T EO, <u>Y JUN</u> , T KIM, J JANG, D HWANG	
• [ <b>*Summa Cum Laude</b> ] <i>International Society for Magnetic Resonance in Medicine (ISMRM)</i> pp. 3974	

## Patents

2022	<b>Method And Device For Correcting Medical Image Using Phantom</b> , Registered, 10-2481027	S.Korea
2022	<b>Apparatus And Method For Reconstructing MR Parameter Map</b> , Registered, 10-2352004	S.Korea
2021	<b>Device And Method For Reconstructing Magnetic Resonance Image Thereof</b> , Registered, 10-2233996	S.Korea
	<b>Learning Apparatus and Method for Generating Encephaloma Discriminative Image, Apparatus and</b>	
2018	<b>Method for Generating Encephaloma Discriminative Image, and Recording Medium thereof</b> , Registered, 10-1928213	S.Korea
2018	<b>Device and Method for Reconstructing Undersampled Magnetic Resonance Image</b> , Registered, 10-1886575	S.Korea

## Skills

<b>Programming Languages</b>	Python, Matlab, Pytorch, Tensorflow/Keras, C/C++ Korean, English
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## Activities

<b>Reviewer</b>	<ul style="list-style-type: none"> <li>• IEEE Transactions on Medical Imaging (IEEE TMI) (*Distinguished Reviewer)</li> <li>• IEEE Sensors Letters</li> <li>• Scientific Reports</li> <li>• Magnetic Resonance in Medicine</li> <li>• International Society for Magnetic Resonance in Medicine (ISMRM 2022-2023)</li> <li>• International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2020-2023)</li> </ul>
<b>Poster Facilitator</b>	<ul style="list-style-type: none"> <li>• International Society for Magnetic Resonance in Medicine (ISMRM 2021)</li> </ul>
<b>Membership</b>	<ul style="list-style-type: none"> <li>• Trainee Memmber of International Society for Magnetic Resonance in Medicine (ISMRM)</li> <li>• Quantitative MR</li> <li>• Pediatric MR</li> </ul>
<b>ISMRM Study Groups</b>	<ul style="list-style-type: none"> <li>• High Field Systems and Applications</li> <li>• MR of Cancer</li> <li>• MR Engineering</li> </ul>



## References

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### Michael S Gee

- Massachusetts General Hospital
- Professor, Deputy Chair of Radiology
- msgee@mgh.harvard.edu
- 1-617-732-5700

### Berkin Bilgic

- Athinoula A. Martinos Center for Biomedical Imaging
- Assistant Professor
- bbilgic@mgh.harvard.edu
- 1-617-866-8740

### Dosik Hwang

- Yonsei University
- Professor
- dosik.hwang@yonsei.ac.kr
- 82-2-2123-5771