

CURRICULUM VITAE

Hwihun Jeong

Ph.D. student

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EDUCATIONS

Mar. 2020 ~ Present **Seoul National University** Seoul, Korea
Department of Electrical and Computer Engineering
Integrated Master and Ph.D. Course

Advisor: Jongho Lee

Mar. 2014 ~ Feb. 2020 **Seoul National University** Seoul, Korea
Department of Electrical and Computer Engineering

Thesis: Generalized method for separating susceptibility and chemical shift/exchange

B.S. in Electrical and Computer Engineering

GPA: 3.91 / 4.3

Summa Cum Laude

JOURNAL PUBLICATIONS

1. Hyunsung Eun⁺, Hwihun Jeong⁺, Jingu Lee, Hyeong-Geol Shin, and Jongho Lee, "A geometric approach to separate the effects of magnetic susceptibility and chemical shift/exchange in a phantom with isotropic magnetic susceptibility.", *Magnetic Resonance in Medicine* 85.1 (2021): 281-289.

CONFERENCES - FULL PAPER

1. Hwihun Jeong, Heejoon Byun, Dong Un Kang, and Jongho Lee, "BlindHarmony: "Blind" Harmonization for MR Images via Flow model.", *International Conference on Computer Vision (ICCV) 2023*, 21129-21139, 2-6 October 2023, Paris, France.

AWARDS AND HONORS

1. ISMRM Magna Cum Laude Merit Award, Hwihun Jeong et al, "MOST: MR reconstruction Optimization for multiple downStream Tasks via continual learning", 32nd ISMRM Annual Meeting & Exhibition, 4-9 May 2024, Singapore.
2. Best Poster Award 3rd place, Hwihun Jeong et al, "Deep learning and Compressed sensing-based ultra-high resolution SEM image reconstruction", SNU-Samsung Industry-Academia Collaboration Symposium, 7 March 2024, Seoul, Korea.
3. Best Poster Award, Hwihun Jeong and Jongho Lee, "ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", 9th International Congress on Magnetic Resonance Imaging & 26th Annual Scientific Meeting of KSMRM, 05-06 November 2021, Seoul, Korea.
4. 2nd place winner of the EMPT study group meeting poster competition, Hwihun Jeong et al, "ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", 2021 ISMRM Electro-Magnetic Tissue Properties Study Group Virtual Business Meeting, 10 June 2021, Online.
5. EMPT study group Members' Choice award, Hwihun Jeong et al, "ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", 2021 ISMRM Electro-Magnetic Tissue Properties Study Group Virtual Business Meeting, 10 June 2021, Online.
6. ISMRM Summa Cum Laude Merit Award, Hwihun Jeong et al, "DeepTSE-T2: Deep learning-powered T2 mapping with B1+ estimation using a product double-echo Turbo Spin Echo sequence", 29th ISMRM Annual Meeting & Exhibition - An Online Experience, 15-20 May 2021, Online.
7. ISMRM Summa Cum Laude Merit Award, Hwihun Jeong et al, "ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", 29th ISMRM Annual Meeting & Exhibition - An Online Experience, 15-20 May 2021, Online.
8. Best Poster Award, Hwihun Jeong and Jongho Lee, "Generalized methods for separating susceptibility and chemical shift/exchange", 8th ICMRI Virtual Congress, 03-04 November 2020, Online.

CONFERENCES – ABSTRACT, SHORT PAPER, OR CONFERENCE PAPER

ORAL

1. Hwihun Jeong, Se Young Chun, and Jongho Lee, "MOST: MR reconstruction Optimization for multiple downStream Tasks via continual learning", 32nd ISMRM Annual Meeting & Exhibition, 4-9 May 2024, Singapore.
2. Hwihun Jeong, Dong Un Kang, Jiye Kim, and Jongho Lee, "MRFlow: Flow-based neural network for MR image harmonization", 31st ISMRM Annual Meeting & Exhibition, 3-8 June 2023, Toronto, Canada.
3. Hwihun Jeong, Hyeong-Geol Shin, Xu Li, Sooyeon Ji, and Jongho Lee, "ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", 29th ISMRM Annual Meeting & Exhibition - An Online Experience, 15-20 May 2021, Online.
4. Hwihun Jeong, Hyeong-Geol Shin, Sooyeon Ji, Jinhee Jang, Hyun-soo Lee, Yoonho Nam, and Jongho Lee, "DeepTSE-T2: Deep learning-powered T2 mapping with B1+ estimation using a product double-echo Turbo Spin Echo sequence", 29th ISMRM Annual Meeting & Exhibition - An Online Experience, 15-20 May 2021, Online.
5. Hwihun Jeong, Hyunsung Eun, and Jongho Lee. "Separating magnetic susceptibility and chemical shift/exchange through multiple directional scans", 5th International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping (QSM), 25-28 September 2019, Seoul, Korea.

POWER PITCH

1. Hwihun Jeong, Heejoon Byun, and Jongho Lee, "BlindHarmony: Blind harmonization for multi-site MR image processing via unconditional flow model", 32nd ISMRM Annual Meeting & Exhibition, 4-9 May 2024, Singapore.
2. Hwihun Jeong, Sung Suk Oh, Jongho Lee and Hyeong-Geol Shin, "Application of susceptibility source separation (χ -separation) to UK Biobank protocol and clinical protocol using deep neural network", Joint Workshop on MR phase, magnetic susceptibility and electrical properties mapping, 16-19 October 2022, Lucca, Italy.
3. Hwihun Jeong, Hyeong-Geol Shin, Xu Li, Sooyeon Ji, and Jongho Lee, " ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", Joint Workshop on MR phase, magnetic susceptibility and electrical properties mapping, 16-19 October 2022, Lucca, Italy.

POSTER

1. Hwihun Jeong and Jongho Lee, " BlindHarmony: Blind Harmonization for MR Images via Flow model", 11th International Congress on Magnetic Resonance Imaging & 28th Annual Scientific Meeting of KSMRM, 03-04 November 2023, Seoul, Korea.
2. Hwihun Jeong, Sung Suk Oh, Jongho Lee and Hyeong-Geol Shin, "Application of susceptibility source separation (χ -separation) to UK Biobank protocol and clinical protocol

using deep neural network", 10th International Congress on Magnetic Resonance Imaging & 27th Annual Scientific Meeting of KSMRM, 04-05 November 2022, Seoul, Korea.

3. Hwihun Jeong, Sung Suk Oh, Jongho Lee and Hyeong-Geol Shin, "Application of susceptibility source separation (χ -separation) to UK Biobank protocol and clinical protocol using deep neural network", Joint Annual Meeting ISMRM-ESMRMB& ISMRT 31st Annual Meeting, 07-12 May 2022, London, UK.
4. Hwihun Jeong and Jongho Lee, "ChEST: A novel model estimating both Chemical Exchange and Susceptibility Tensor from resonance frequency shift", 9th International Congress on Magnetic Resonance Imaging & 26th Annual Scientific Meeting of KSMRM, 05-06 November 2021, Seoul, Korea.
5. Hwihun Jeong and Jongho Lee, "Generalized methods for separating susceptibility and chemical shift/exchange", 2nd Annual Scientific Meeting of ASMRM & 8th International Congress on MRI & 25th Annual Scientific Meeting of KSMRM, 03-04 November 2020, Online.
6. Hwihun Jeong, Hyunsung Eun, and Jongho Lee, "Generalized methods for separating susceptibility and chemical shift/exchange", 28th ISMRM Virtual Conference & Exhibition, 08-14 August 2020, Online.

RESEARCH EXPERIENCES

1. Visiting student at Stanford University, Stanford, CA (supervised by Kawin Setsompop; Dec. 2023 ~ Feb. 2024)
2. Research Intern at Network Division, Samsung Electronics, Suwon, Korea (Jan. 2019 ~ Feb. 2019)

TEACHING EXPERIENCES

- ◆ Teaching Assistant, Special Topics in Signal Processing (graduate course), Spring semester, 2022, Seoul National University, Korea.
- ◆ Teaching Assistant, Signals and Systems (undergraduate course), Spring semester, 2021, Seoul National University, Korea.

PROFESSIONAL EXPERIENCES

- ◆ National military service at Republic of Korea Airforce, Sacheon, Korea (Aug. 2016 ~ Aug. 2018)

RESEARCH INTEREST

- ◆ Machine learning based medical image processing
 - Machine learning application to biomedical image
 - Model-based machine learning
 - Clinical application of medical deep learning
- ◆ Magnetic resonance imaging
 - Modeling of phase contrast in MR signal
 - Human brain microstructure

SKILLS AND TECHNIQUES

- ◆ Programming languages (Python, Matlab, C++, Java)
- ◆ Machine learning skills (Tensorflow, Pytorch)
- ◆ Image processing techniques
- ◆ MRI operating