Seong Jae, Park

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Career Summary

- Master's degree in Electrical Engineering, Bachelor's degree in Mathematics
- Specialized : ML, DL, Image & signal processing, Compressive sensing, Frequency analysis

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Feb. 2021 ~ Present	**HUINNO Co. Ltd.**	Seoul, Korea
	A.I., Data scientist	

Mar. 2019 ~ Feb. 2021	**Kwangwoon University**	Seoul, Korea
	Department of Electrical Engineering	

Thesis: Blended-transfer learning for compressed-sensing cardiac CINE MRI
Advisor: Chang-Beom Ahn
M.S. in Electrical Engineering

Mar. 2014 ~ Feb. 2019	**Kwangwoon University**	Seoul, Korea
	Department of Mathematics	

Thesis: Myocardial image segmentation using CNN
Advisor: Jong-woo Lee
B.S. in Mathematics

Mar. 2014 ~ Feb. 2019	**Kwangwoon University**	Seoul, Korea
	Department of Electrical Engineering	

Advisor: Seung-ho Song
B.S. in Electrical Engineering

Research Interests

Magnetic Resonance Imaging (MRI):

Compressed-sensing, Image Reconstruction, Image Segmentation, Artifact correction,
Parallel imaging, fast imaging.

Computed Tomography (CT):

Cone-beam CT image reconstruction, Metal artifact reduction,
Compressed-sensing, Low-dose system, fast imaging.

Electrocardiogram (ECG/EKG):

12-lead classification, Single-lead classification, Beat detection, ECG captioning.

Artificial Intelligence (AI):

Generative models (AE, Score-based, Diffusion),
Conditional & Multi-modal model, Representation learning, Knowledge distillation
Super resolution, Style transfer.

Publications

- **S.J. Park**, J.H. Yoon, C.B. Ahn, "Compressed-sensing cardiac CINE MRI using neural network with transfer learning," Journal of Institute of Korean electrical and electronic engineering, 23(4), 2019, pp. 293-299.

- **S.J. Park**, C.B Ahn, "Blended-transfer learning for compressed-sensing cardiac CINE MRI," Investigative Magnetic Resonance Imaging, 25(1), 2021, *DOI***:** 10.13104/imri.2021.25.1.10

- **S.J. Park**, C.G. Lim, C.B. Ahn, "Network slimming for compressed-sensing cardiac CINE MRI," Electronic Letters, *DOI***:** 10.1049/ell2.12084

- C.G. Lim, **S.J. Park,** C.B. Ahn, "Tile-net for compressed-sensing cardiovascular CINE MRI," Magnetic Resonance Imaging, *DOI***:** 10.1016/j.mri/2021.09.001

- **S.J. Park***, H. Han*, et al., "Towards high generalization performance on electrocardiogram classification," *DOI***:** 10.23919/CinC53138.2021.9662737

- J. Jang, **S.J. Park**, et al., "CNN-based two step R peak detection method: Combining segmentation and regression.," *DOI***:** 10.1109/EMBC48229.2022.9871227

- H. Han, **S.J. Park**, et al., "Improving generalization performance of electrocardiogram classification models," under review

- K. Ha, **S.J. Park**, et al., "A SimSiam-based Generalized Model Training Technique for Classification of ECG from Heterogeneous Devices", BigComp, under review

- S. Chon, K. Ha, **S.J. Park**, et al., "An ECG Beat Classification Method using Multi-kernel ResNet with Transformer", BigComp, under review

Patents

- Chang-Beom Ahn, **Seong Jae Park**, "SYSTEM AND METHOD OF GENERATING MAGNETIC RESONANCE IMAGE USING DEEP ARTIFICIAL NEURAL NETWORK" (Korea – Application No.10-2020-0008807).

Awards and Honors

- Best Poster Award, Korean Society for Imaging Science and Technology (KSIST), 2019.
- Best Poster Award, International Congress on Magnetic Resonance Imaging (ICMRI), 2020.
- 1st Prize on 3, 4 leads classification, PhysioNet, 2021.
- 2nd Prize on 2, 6, 12 leads classification, PhysioNet, 2021.

Project

- Dental Computed Tomography (CT) Metal Artifact Reduction (MAR) & Low-dose system, Genoray, Seong-Nam (2018).
- Development of hybrid medical imaging system based on algorithm and data, Kwangwoon University, Korea (2019 ~ 2020).
- Arrhythmia classification on ECG, HUINNO Co. Ltd., Seoul (2021 ~).
- Beat detection, HUINNO Co. Ltd., Seoul (2021 ~).