

Heejong Kim

CONTACT INFORMATION	Artificial Intelligence in Radiology Weill Cornell Medicine & Cornell Tech 11 E Loop Rd 5th Floor, New York, NY 10044	<i>E-mail:</i> hkim@med.cornell.edu <i>Web:</i> heejongkim.com <i>Github:</i> heejong-kim <i>Google Scholar:</i> D3lZyGIAAAAJ
RESEARCH INTERESTS	Biomedical Image Analysis: Medical Vision, and Longitudinal Analysis. Applications: Prostate Cancer, Brain Development, and Neurodegenerative Diseases.	
ACADEMIC APPOINTMENTS	Instructor of AI in Radiology, Weill Cornell Medical College Advisor: Prof. Mert Sabuncu	06/2024 – present
	Postdoctoral Associate , Weill Cornell Medical College Advisor: Prof. Mert Sabuncu	09/2021 – 06/2024
EDUCATION	New York University , New York, USA PhD in Computer Science Advisor: Prof. Guido Gerig Thesis: Spatiotemporal Modeling of Orientation Distribution Functions for Longitudinal High Angular Resolution Diffusion MRI atlas	09/2016 – 08/2021
	Korea University , Seoul, South Korea MEng in Bioconvergence Engineering Advisor: Prof. Joon-kyung Seong Thesis: Network analysis of gray matter atrophy: from co-atrophy to transneuronal spread of Alzheimer's disease	09/2014 – 08/2016
	Korea University , Seoul, South Korea BEng in Biomedical Engineering Advisor: Prof. Joon-kyung Seong Thesis: Effect of education years on Alzheimer's disease from a network point of view	03/2010 – 08/2014
INDUSTRIAL EXPERIENCE	Nokia Bell Labs , New Jersey, USA PhD Internship	06/2019 – 08/2019
	Boston Scientific , Seoul, South Korea Undergraduate Internship	06/2013 – 08/2013
GRANTS	Awarded [1] Principal Investigator, "Robust and Interpretable Multimodal Machine Learning Models for Diagnosis and Prognosis of Prostate Cancer", NIH NCI K25, 2024-2029. [2] Principal Investigator, "Robust and Interpretable Multimodal Machine Learning Models for Diagnosis and Prognosis of Prostate Cancer", Postdoctoral Researcher Seed Grant, Weill Cornell Medicine, 2023	
AWARDS	Runner-up, MICCAI BraTS Challenge NIH Travel Award, MICCAI Best Oral Presentation, MICCAI CDMRI workshop Best Student Paper Finalist, SPIE Medical Imaging Dean's PhD Fellowship, Tandon School of Engineering, New York University Best Biomedical Image Award, Korea Society of Medical and Biological Engineering Best Poster Presentation, Korea Society of Medical and Biological Engineering BrainKorea21 PLUS Scholarship	2024 2020 2019 2019 2016 2015 2014 2014 – 2015

JOURNAL PAPERS

- [1] Karaman, B. K., Nguyen, M., **Kim, H.**, and Sabuncu, M. R. A Deep Survival Model for Predicting Alzheimer's Diagnosis Based on Multi-Modal Longitudinal Data. *Big Data Mining and Analytics*, 2026. doi:[10.26599/BDMA.2025.9020064](https://doi.org/10.26599/BDMA.2025.9020064)
- [2] Roberts, A. G., Zhang, J., Tozlu, C., Romano, D., Akkus, S., **Kim, H.**, ... and Kopell, B. H. Technical Feasibility of Quantitative Susceptibility Mapping Radiomics for Predicting Deep Brain Stimulation Outcomes in Parkinson's Disease. *Neurosurgery*, 2025. doi:[10.1227/neu.0000000000003721](https://doi.org/10.1227/neu.0000000000003721)
- [3] Nguyen, M., Karaman, B. K., **Kim, H.**, Wang, A. Q., Liu, F., and Sabuncu, M. R. Knock-out: A simple way to handle missing inputs. *Transactions on machine learning research*, 2025.
- [4] Roberts, A. G., Zhang, J., Tozlu, C., Akkus, S., Romano, D., Wu, X., Li, J., **Kim, H.**... and Kopell, B. H. (2025). Radiomic prediction of Parkinson's disease deep brain stimulation surgery outcomes using quantitative susceptibility mapping and label noise compensation. *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, 2025. doi:[10.1016/j.brs.2025.05.062](https://doi.org/10.1016/j.brs.2025.05.062)
- [5] Wang, A. Q., Saluja, R., **Kim, H.**, He, X., Dalca, A., and Sabuncu, M. R. BrainMorph: A Foundational Keypoint Model for Robust and Flexible Brain MRI Registration. *Machine Learning for Biomedical Imaging (MELBA)*, 2025. doi:[10.59275/j.melba.2025-59g7](https://doi.org/10.59275/j.melba.2025-59g7)
- [6] **Kim, H.**, Karaman, B. K., Qingyu Zhao, Wang, A. Q., and Sabuncu, M. R. Learning-based inference of longitudinal image changes: Applications in embryo development, wound healing, and aging brain. *Proceedings of the National Academy of Sciences*, 2025. doi:[10.1073/pnas.2411492122](https://doi.org/10.1073/pnas.2411492122)
- [7] Wang, A. Q., Karaman, B. K., **Kim, H.**, Rosenthal, J., Saluja, R., Young, S. I., and Sabuncu, M. R. A Framework for Interpretability in Machine Learning for Medical Imaging. *IEEE Access*, 2024. doi:[10.1109/ACCESS.2024.3387702](https://doi.org/10.1109/ACCESS.2024.3387702)
- [8] **Kim, H.**, Kang, S. W., Kim, J. H., Nagar, H., Sabuncu, M. R., and Margolis, D. J. The role of AI in prostate MRI quality and interpretation: Opportunities and challenges. *European Journal of Radiology*, 110887, 2023. doi:[10.1016/j.ejrad.2023.110887](https://doi.org/10.1016/j.ejrad.2023.110887)
- [9] **Kim, H.**, Margolis, D. J., Nagar, H., and Sabuncu, M. R. Pulse Sequence Dependence of a Simple and Interpretable Deep Learning Method for Detection of Clinically Significant Prostate Cancer Using Multiparametric MRI. *Academic Radiology*, Preliminary Investigation. 2022. doi:[10.1016/j.acra.2022.10.005](https://doi.org/10.1016/j.acra.2022.10.005)
- [10] Shah, S., Yu, C. N., Zheng, M., **Kim, H.**, and Eggleston, M. S. Microparticle-based biochemical sensing using optical coherence tomography and deep learning. *ACS nano*, 15(6), 9764-9774. 2021. doi:[10.1021/acsnano.1c00497](https://doi.org/10.1021/acsnano.1c00497)
- [11] **Kim, H. J.**, Shin, J. H., Han, C. E., Kim, H. J., Na, D. L., Seo, S. W., ... and Alzheimer's Disease Neuroimaging Initiative. Using individualized brain network for analyzing structural covariance of the cerebral cortex in Alzheimer's patients. *Frontiers in neuroscience*, 10, 394. doi:[10.3389/fnins.2016.00394](https://doi.org/10.3389/fnins.2016.00394)
- [12] Jung, N. Y., Han, C. E., Kim, H. J., Yoo, S. W., **Kim, H. J.**, Kim, E. J., ... and Seo, S. W. Tract-specific correlates of neuropsychological deficits in patients with subcortical vascular cognitive impairment. *Journal of Alzheimer's Disease*, 50(4), 1125-1135. doi:[10.3233/JAD-150841](https://doi.org/10.3233/JAD-150841)

- [13] ***Kim, H.**, *Thanki, A., van Herten, R., Margolis, D., and Sabuncu, M. R. Single-Subject Multi-View MRI Super-Resolution via Implicit Neural Representations. In *Medical Image Computing and Computer Assisted Intervention–MICCAI 2026*, 2026.
- [14] Nguyen, M., Wang A. Q., **Kim, H.**, Sabuncu, M. R. Adapting to Shifting Spurious Correlations with Unlabeled Data Calibration In *European Conference on Computer Vision*. Milan, 2024.
- [15] Nguyen, M., Wang A. Q., **Kim, H.**, Sabuncu, M. R. Robust Learning via Conditional Prevalence Adjustment In *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*. HAWAII, 2024.
- [16] **Kim, H.**, Butoi, V. I., Dalca, A. V., and Sabuncu, M. R. Empirical Analysis of a Segmentation Foundation Model in Prostate Imaging In *Medical Image Computing and Computer Assisted Intervention – MICCAI 2023 Workshops*. Vancouver, 2023.
- [17] **Kim, H.**, and Sabuncu, M. R. Learning to Compare Longitudinal Images. In *Medical Imaging with Deep Learning (MIDL)*. Nashville, 2023.
- [18] *Ren, M., ***Kim, H.**, Dey, N., and Gerig, G. Q-space conditioned translation networks for directional synthesis of diffusion weighted images from multi-modal structural mri. In *Medical Image Computing and Computer Assisted Intervention–MICCAI 2021: 24th International Conference*. Strasbourg, France, September 27–October 1, 2021, Proceedings, Part VII 24 (pp. 530-540). doi:[10.1007/978-3-030-87234-2_50](https://doi.org/10.1007/978-3-030-87234-2_50)
- [19] Elaldi, A., Dey, N., **Kim, H.**, and Gerig, G. Equivariant spherical deconvolution: learning sparse orientation distribution functions from spherical data. In *Information Processing in Medical Imaging: 27th International Conference, IPMI 2021*, Virtual Event, June 28–June 30, 2021, Proceedings 27 (pp. 267-278). doi:[10.1007/978-3-030-78191-0_21](https://doi.org/10.1007/978-3-030-78191-0_21)
- [20] **Kim, H.**, Yu, C. N., Kennedy, W., Eggleston, M., and Shah, S. Automated Monitoring for Optical Coherence Tomography-based Biosensing Using Deep Learning. In *2020 IEEE Photonics Conference (IPC)* (pp. 1-2). IEEE. doi:[10.1109/IPC47351.2020.9252523](https://doi.org/10.1109/IPC47351.2020.9252523)
- [21] **Kim, H.**, Hong, S., Styner, M., Piven, J., Botteron, K., and Gerig, G. Hierarchical geodesic modeling on the diffusion orientation distribution function for longitudinal DW-MRI analysis. In *Medical Image Computing and Computer Assisted Intervention–MICCAI 2020: 23rd International Conference*, Lima, Peru, October 4–8, 2020, Proceedings, Part VII 23 (pp. 311-321). doi:[10.1007/978-3-030-59728-3_31](https://doi.org/10.1007/978-3-030-59728-3_31)
- [22] **Kim, H.**, Styner, M., Piven, J., and Gerig, G. A framework to construct a longitudinal dw-mri infant atlas based on mixed effects modeling of dodf coefficients. In *Computational Diffusion MRI: MICCAI Workshop*, Shenzhen, China, October 2019 (pp. 149-159). doi:[10.1007/978-3-030-52893-5_13](https://doi.org/10.1007/978-3-030-52893-5_13)
- [23] **Kim, H.**, Piven, J., and Gerig, G. Longitudinal structural connectivity in the developing brain with projective non-negative matrix factorization. In *Medical Imaging 2019: Image Processing* (Vol. 10949, pp. 189-196). doi:[10.1117/12.2512830](https://doi.org/10.1117/12.2512830)
- [24] "Learning-based inference of longitudinal image changes", The Artificial Intelligence and Machine-Learning (AIMS) working group of the North American Imaging in MS (NAIMS) Cooperative, Online, 2025.
- [25] "Artificial Intelligence in Medicine." Annual Symposium for Evolving Therapies and Drug Development in Oncology, Fairfax, USA, 2024.

- [26] "Foundation Models for Medical Image Segmentation: Case Study for Prostate Imaging." Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, USA, 2023.
- [27] "Artificial Intelligence in Medicine." Annual Symposium for Evolving Therapies and Drug Development in Oncology, Dulles, USA, 2023.
- [28] "Longitudinal modeling of the diffusion profile from higher-order diffusion MRI." BME Department Seminar, Korea University, Seoul, South Korea, 2021.
- [29] "Q-space conditioned translation networks for directional synthesis of diffusion weighted images from multi-modal structural mri." MICCAI, Remote, 2021.
- [30] "A framework to construct a longitudinal dw-mri infant atlas based on mixed effects modeling of dodf coefficients." CDMRI: MICCAI Workshop, Shenzhen, China, 2019.
- [31] "Longitudinal structural connectivity in the developing brain with projective non-negative matrix factorization." SPIE, San Diego, USA, 2019.

TEACHING

Course

- Data Science in the Wild, Cornell Tech, Spring 2025

Research Mentorship

- Postdoctoral Researchers
 - Seungbin Park
- Visiting Researchers
 - Peilin Wang
- Master's Students
 - Abhishek Thanki
 - Shubham Rateria
 - Susan Wu
 - Priyana Aragula
- Undergrad Students
 - Sana Khan
 - Joshua Paik
 - Ruibo Wang

ACADEMIC SERVICE

Editorial Board

- Managing Editor, *Machine Learning for Biomedical Imaging* (MELBA) 2026–

Grant Review

- NIH CTIS Study Section 02/2026
- NIH CSR Special Emphasis Panel (SEP): Clinical Data Management, Analysis, Informatics, and Digital Health 07/2025
- NIH CSR Special Emphasis Panel (SEP): Clinical Data Management, Analysis, Informatics, and Digital Health 04/2025

Journal Reviewer

- *Radiology: Artificial Intelligence*
- *IEEE Transactions on Medical Imaging* (TMI)
- *Medical Image Analysis* (MedIA)
- *Machine Learning for Biomedical Imaging* (MELBA)
- *Imaging Neuroscience*
- *NeuroImage: Clinical*
- *British Journal of Radiology* (BJR)

Conference Reviewer

- Medical Image Computing and Computer Assisted Intervention (MICCAI)
- IEEE International Symposium on Biomedical Imaging (ISBI)
- Winter Conference on Applications of Computer Vision (WACV)

- Medical Imaging Meets NeurIPS
- IJCAI Special Track on AI and Social Good

Organizing

- Junior Chair (Roundtables), NeurIPS Workshop on ML for Health (ML4H Symposium) 2022

ACADEMIC REFERENCES

Prof. Mert R. Sabuncu, Full Professor of School of Electrical and Computer Engineering (ECE) at Cornell Tech and Department of Radiology at Weill Cornell Medicine, Cornell University. *Prof. Sabuncu is my current advisor.*

Prof. Guido Gerig, Emeritus Professor of Computer Science and Engineering Department (CSE) at NYU Tandon School of Engineering. *Prof. Gerig was my PhD advisor.*

Prof. Joon-kyung Seong, Professor of School of Biomedical Engineering and Department of Artificial Intelligence at Korea University. *Prof. Seong was my academic advisor during my undergraduate and master's studies.*

Updated: 06/2026