Younjoon Chung

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Research Interests

Medical Imaging; Data-Focused Computer Vision; Robust Machine Learning; Fairness in AI; Generative AI

Education

Yale University — New Haven, CT
Ph.D. in Computational Biology and Biomedical Informatics — Current
Advisor: Prof. Qingyu Chen | Co-Advisor: Prof. Lucila Ohno-Machado

Carnegie Mellon University — Pittsburgh, PA
M.S. in Computer Vision (School of Computer Science) — 12/2023
Advisor: Prof. Fernando De la Torre | Human Sensing Lab

Sogang University — Seoul, Korea
B.S. in Computer Science and Engineering — 02/2018
GPA 3.58/4.30 (3.52/4.00), *Magna Cum Laude*

Publications

[1] **Y. Chung (*)**, H. Park (*), P. Rim (*), X. Zhang, J. He, Z. Zeng, S. Cicek, B. W. Hong, J. Duncan, A. Wong, "ETA: Energy-based Test-time Adaptation for Depth Completion." ICCV 2025.
[2] P. Rim, H. Park, S. Gangopadhyay, Z. Zeng, **Y. Chung**, A. Wong, "ProtoDepth: Unsupervised Continual Depth Completion with Prototypes." CVPR 2025.
[3] Y. O. Wang (*), **Y. Chung (*)**, C. H. Wu, F. De la Torre, "Domain Gap Embeddings for Generative Dataset Augmentation." CVPR 2024.
[4] Y.-C. Kim, **Y. Chung**, Y. H. Choe, "Deep learning for classification of late gadolinium enhancement lesions based on the 16-segment left ventricular model." Physica Medica, 2024.
[5] M. Chung, S. T. Kong, B. Park, **Y. Chung**, K. H. Jung, J. B. Seo, "Utilizing synthetic nodules for improving nodule detection in chest radiographs." Journal of Digital Imaging, 2022.
[6] Y.-C. Kim, **Y. Chung**, Y. H. Choe, "Automatic localization of anatomical landmarks in cardiac MR Perfusion using random forests." Biomed. Signal Process. Control, 2019.
[7] Y.-C. Kim, K. R. Kim, K. Choi, M. Kim, **Y. Chung**, Y. H. Choe, "EVCMR: A tool for the quantitative evaluation and visualization of cardiac MRI data." Comput. Biol. Med., 2019.

Patents

[1] B. Park, M. Chung, S. K. Kong, **Y. Chung**, "Method to read chest image." U.S. Patent App. 17/466,697, filed Mar 10, 2022.

[2] M. Chung, B. Park, S. K. Kong, **Y. Chung**, "Method for detecting abnormal findings and generating interpretation text of medical image." U.S. Patent App. 17/471,001, filed Mar 17, 2022.

Academic Experience

Human Sensing Lab, CMU — Pittsburgh, PA
Graduate Research Assistant — Jan 2023 – Current

- Co-first-author project on generative dataset augmentation; submitted to CVPR 2024.
- Built a chest X-ray image synthesis pipeline, validated by radiologist (60% realism).

Samsung Medical Center — Seoul, Korea
Undergrad Research Assistant — Jan 2016 – Mar 2018

- Developed PyQt tools for 4D MRI data labeling.
- Trained random-forest models for myocardial perfusion landmark detection.

Work Experience

VUNO Inc. Seoul, Korea
Research Engineer Jun 2020 – Jun 2022

- Built Residual 3D U-Net CADe model for lung nodules (IoU 0.8); deployed in VUNO Med®-LungCT AI™.
- Developed Lung-RADS CADx system, state-of-the-art performance; pending clinical trials.
- Optimized on-device CAD for Samsung X-ray GM85 Fit: 70% CPU speedup via OpenVINO.
- Innovated automatic windowing for chest X-rays; improved Dice by 1–2% (RSNA 2021 oral).

Selvas AI Inc. Seoul, Korea
Software Developer Mar 2018 – Jun 2020

- Designed end-to-end OCR pipelines: data collection, labeling, training, evaluation.
- Built FPN text-localization for Korean characters (F1 0.75) for SK Telecom Doosan projects.

Awards

Contributhon Silver Award (2nd), Korean Ministry of Science ICT—Led Keras Korean doc translation team (Dec 2019).

Contributhon Bronze Award, Korean Ministry of Science ICT—Keras tutorial translation (Nov 2018).

Best Evangelism Award, Microsoft Student Partners (Feb 2018, Jul 2017).

NAVER D2 Campus Fest "Beyond Fest" 1st Place (Aug 2017).

Selected Talks

"How is Medical AI different?" Fast Campus 2022.

"Introduction to Open Source," SOSCON 2019.

"Keras Hands-on Lab," Global AI Bootcamp 2019.

Teaching Experience

Fast Campus 2021: 8-hr online hands-on AI class (TF/Keras).

Seoul Metropolitan Gov. 2019: Intro to AI image processing.

Mission Mars (APAC ML DS Summit 2017): Azure ML text-classification workshop.

Scholarships

NAVER Student Scholarship (Dec 2017).

Silicon Valley Data Science Program (Fall 2017).

Merit-based Academic Excellence (Spring Fall 2014).

Outreach Activities

Mentor, CMU Undergraduate AI Mentoring Program (Fall 2023).

Committee Member, Keras Korea (Mar 2018 – Present).

Technology Evangelist, Microsoft Student Partners (Mar 2015 – Mar 2016).

Open Source Contributions

25+ commits to Keras ecosystem (keras, keras-applications, keras-preprocessing).

Maintainer, official Korean translation of Keras docs.

"Introduction to Practical Data Science" code contributions for data science handbook.

Skills

Programming: Python; C, C++, HTML.

Language Tests: TOEFL iBT 110 [R30/L30/S26/W24].

Languages: English (fluent), Korean (native).

References

Available upon request.