Hyeonwoo Cho

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Seoul, South Korea

Bio

Hyeonwoo Cho is an AI research engineer at OSSTEM IMPLANT. He received his MS in Computer Vision from Kyushu University in 2022, where his research focused on domain adaptation and semi-supervised learning for various task including classification, object detection and segmentation. His research interests include continual learning, test-time adaptation, noisy label learning, and 3D vision.

Experience

- **OSSTEM IMPLANT [🌐]** *March 2024 - Present*
  AI Researcher Seoul, South Korea
  - Developing A Tooth Align Generative Model from Tooth Mesh (Geometric & Generative AI)
  - Developed A Crown Generation Model from Mesh and Point-Cloud. (Geometric & Generative AI)
  - Developing A Nerve Segmentation Model from CBCT (3D CT)
  - Developed A Treatment Segmentation Model from Panorama (2D X-ray)
- **VUNO [🌐]** *March 2022 - March 2024*
  AI Researcher Seoul, South Korea
  - Developed A Early Dignosis AI system for Lung Cancer. (3D Lung CT)
  - Conducted Analysis of frontotemporal dementia based Brain Volumetric Information. (3D Brain MRI)

Education

- **Kyushu University** *April 2020 - March 2022*
  MS in Information Science and Electrical Engineering Fukuoka, Japan
  - GPA: 4.00/4.00
- **Kyushu University** *April 2016 - March 2020*
  BS in Aeronautics and Astronautics Fukuoka, Japan
  - GPA: 3.40/4.00

Projects

- **Tooth Alignment with Generative AI** *October 2024 - Present*
  Task: Generation OSSTEM IMPLANT
  - Development of a tooth movement prediction model for tooth alignment.
  - Generate multiple steps between initial tooth to setup tooth for planning tooth alignment.
- **Tooth Treatment Segmentation** *August 2024 - October 2024*
  Task: Segmentation OSSTEM IMPLANT
  - Development of a tooth treatment segmentation model.
  - Implemented model optimization for model's inference speed.
- **Mesh Generation** *March 2024 - August 2024*
  Task: Generation Details: [🌐]
  - Development of a crown generation model.
  - Implemented point-cloud completion and mesh reconstruction.
- **Brain MRI Segmentation** *October 2023 - March 2024*
  Task: Segmentation & Analysis Details: [🌐]
  - Development of a solution for segmentation brain volumes.
  - Brain volumetry analysis for differential diagnosis of frontotemporal dementia subtypes.
  - Collaboration with Severance Hospital.
- **Lung Cancer Detection** *March 2022 - October 2023*
  Task: Detection & Analysis Details: [🌐]
  - Development of a solution for early detection and analysis of nodules that can develop into lung cancer from lung CT scan information of patients.
  - Designed two stage detection algorithm for lung CT.

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

[S.1] Hyeonwoo Cho, et al. (2025). **Joint-Embedding Predictive Architecture for Self-Supervised Learning of Mask Classification Architecture**. Manuscript submitted for publication in *CVPR2025*.

[C.1] Hyeonwoo Cho, et al. (2024). **CNG-SFDA: Clean-and-Noisy Region Guided Online-Offline Source-Free Domain Adaptation**. In *Asian Conference on Computer Vision-ACCV2024*. Springer Nature.

[C.2] Hyeonwoo Cho, et al. (2024). **Automated Brain Volumetry Analysis for Differential Diagnosis of Frontotemporal Dementia Subtypes**. In *Alzheimer's Association International Conference*. ALZ.

[C.3] Hyeonwoo Cho, et al. (2024). **Comparison of intracranial volume adjustment methods to evaluate brain atrophy severity in AD continuum**. In *Alzheimer's Association International Conference*. ALZ.

[C.4] Hyeonwoo Cho, et al. (2024). **Quantitative Analysis of Choroid Plexus Enlargement in Alzheimer's Dementia: A Study of Automated Volumetric Technique**. In *Alzheimer's Association International Conference*. ALZ.

[J.1] Hyeonwoo Cho, et al. (2022). **Effective pseudo-labeling based on heatmap for unsupervised domain adaptation in cell detection**. *Medical Image Analysis*, Vol. 79, Elsevier.

[C.5] Hyeonwoo Cho, et al. (2021). **Cell detection in domain shift problem using pseudo-cell-position heatmap**. In *Medical Image Computing and Computer Assisted Intervention–MICCAI 2021*. Springer Nature Switzerland.

[C.6] Hyeonwoo Cho, et al. (2021). **Semi-supervised cell detection in time-lapse images using temporal consistency**. In *Medical Image Computing and Computer Assisted Intervention–MICCAI 2021*. Springer Nature Switzerland.

SKILLS

- **Programming Languages:** Python, SQL
- **Data Science & Machine Learning:** Pytorch, Tensorflow
- **DevOps & Version Control:** Github
- **Specialized Area:** Linux, Shell, Docker
- **Research Skills:** LaTeX

HONORS AND AWARDS

- **Competition: Google-Isolated Sign Language Recognition** *July 2023*
  Awarding Kaggle/Google [🌐]
  - Video Multi-Class Classification
  - Code [GitHub]
- **Excellent student award** *March 2022*
  Awarding Kyushu University graduation
  - Outstanding performance in the department.
- **Korea-Japan Joint Government Scholarship Program** *March 2016 - March 2020*
  The Government of South Korea/The Government of Japan
  - Overall USD 76,000 or more.
  - A full funding for undergraduate studies in science and engineering departments under the government of South Korea and the government of Japan.

LEADERSHIP EXPERIENCE

- **Leader** *March 2021 - March 2022*
  Kyushu University Korean Student Association/Kyushu University
  - Responsible for assisting and managing the academic and extracurricular activities of international students.
  - Increased the student association registration rate by over 50

ADDITIONAL INFORMATION

Languages: Japanese (Full Professional Proficiency), English (Professional Working Proficiency)