

Seonghui Min

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Research Interests

Deep Learning, Computer Vision, Label-Efficient Learning, Generative AI, Foundation Models, Medical Image Analysis

Education

Korea University

M.S. in Computer Science and Engineering

Advisor: Won-Ki Jeong

Seoul, South Korea

Mar. 2022 - Feb. 2024

Korea University

B.Eng. in Biomedical Engineering

Seoul, South Korea

Mar. 2018 - Feb. 2022

Research Experience

High-performance Visual Computing Lab

Research Assistant @ Korea University

Advisor: Won-Ki Jeong

Seoul, South Korea

Sep. 2021 - Mar. 2024

- Generative Models for Data Augmentation in Histopathology Images
- Weakly-Supervised Nuclei Segmentation in Histopathology Images
- Interactive Tumor Region Segmentation in Histopathology Images

Brain Reverse Engineering by Intelligent Neuroimaging Lab

Research Intern @ Korea University

Advisor: Joon-Kyung Seong

Seoul, South Korea

Mar. 2021 - Aug. 2021

- Regional Amyloid Positivity Prediction using Brain MRI in Alzheimer's Disease

Publications

Conference Proceedings (* equal contribution)

[C3] Co-synthesis of Histopathology Nuclei Image-Label Pairs using a Context-Conditioned Joint Diffusion Model

Seonghui Min*, Hyun-Jic Oh*, Won-Ki Jeong

European Conference on Computer Vision (ECCV), 2024

[C2] Evaluation and improvement of Segment Anything Model for interactive histopathology image segmentation

SeungKyu Kim, Hyun-Jic Oh, **Seonghui Min**, Won-Ki Jeong

MICCAI Workshop on Foundation Models for General Medical AI, 2023

[C1] CGAM: click-guided attention module for interactive pathology image segmentation via backpropagating refinement

Seonghui Min, Won-Ki Jeong

IEEE International Symposium on Biomedical Imaging (ISBI), 2023

Journal Publications (* equal contribution)

[J2] S2L-CM: Scribble-supervised Nuclei Segmentation in Histopathology Images using Contrastive Regularization and Pixel-Level Multiple Instance Learning

Hyun-Jic Oh*, **Seonghui Min***, Won-Ki Jeong

Under Review

[J1] ZoomISEG: Interactive Multi-Scale Fusion for Histopathology Whole Slide Image Segmentation

Seonghui Min, Won-Ki Jeong

Journal of the Korea Computer Graphics Society, 2023, 29.3: 127-135.

Teaching

(COSE490) Special Lecture for Computer Science

Fall 2022

Teaching Assistant @ Korea University

(COSE213) Data Structure

Spring 2022

Teaching Assistant @ Korea University

Academic Activities

Biomedical Engineering Academic Team

Seoul, South Korea

Team Member @ Korea University

Fall 2020 - Spring 2021

Advisor: Joon-Kyung Seong

- Studied deep learning theories and participated in research paper seminars

Honors and Awards

Research Scholarship, Korea University (Fall 2022, Spring 2023, Fall 2023)

Research Assistant Scholarship, Korea University (Spring 2022, Fall 2022, Spring 2023)

Semester High Honors, Korea University (Spring 2019, Fall 2020 - Fall 2021)

3rd Place Award, Campus CEO Start-Up Competition, *Team Leader @ Korea University* (Fall 2020)

Skills

Programming

- Python, PyTorch, OpenCV, Scikit-learn, Matlab

Languages

- English: TOEFL 107/120
- Korean: Native