

# Seonghui Min

✉ seonghui.min01@gmail.com    🔗 seonghui-min.github.io

## Research Interests

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

## Education

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### 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

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### 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

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### 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

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 2023 Workshop on Foundation Models for General Medical AI (MedAGI)

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

**Seonghui Min**, Won-Ki Jeong

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)

## Teaching

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**(COSE490) Special Lecture for Computer Science**

*Fall 2022*

*Teaching Assistant @ Korea University*

**(COSE213) Data Structure**

*Spring 2022*

*Teaching Assistant @ Korea University*

## Academic Activities

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**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

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

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

## Skills

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### Programming

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

### Languages

- English: TOEFL 107/120
- Korean: Native