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 | Seoul, South Korea *Mar. 2022 - Feb. 2024*
M.S. in Computer Science and Engineering
Advisor: Won-Ki Jeong

Korea University | Seoul, South Korea *Mar. 2018 - Feb. 2022*
B.Eng. in Biomedical Engineering

Research Experience

Korea University | Seoul, South Korea *Sep. 2021 - Mar. 2024*
Research Assistant, High-performance Visual Computing Lab
Advisor: Won-Ki Jeong

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

Korea University | Seoul, South Korea *Mar. 2021 - Aug. 2021*
Research Intern, Brain Reverse Engineering by Intelligent Neuroimaging Lab
Advisor: Joon Kyung Seong

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

Publications

Conference Proceedings (***** equal contribution)

[C-03] **Seonghui Min***, Hyun-Jic Oh*, Won-Ki Jeong "Co-synthesis of Histopathology Nuclei Image-Label Pairs using a Context-Conditioned Joint Diffusion Model", *European Conference on Computer Vision* (**ECCV**), 2024.

[C-02] SeungKyu Kim, Hyun-Jic Oh, **Seonghui Min**, Won-Ki Jeong "Evaluation and improvement of Segment Anything Model for interactive histopathology image segmentation", MedAGI (**MICCAI Workshop**), 2023.

[C-01] **Seonghui Min**, Won-Ki Jeong "CGAM: click-guided attention module for interactive pathology image segmentation via backpropagating refinement", *IEEE International Symposium on Biomedical Imaging* (**ISBI**), 2023.

Journal Publications (***** equal contribution)

[J-02] Hyun-Jic Oh*, **Seonghui Min***, Won-Ki Jeong "S2L-CM: Scribble-supervised Nuclei Segmentation in Histopathology Images using Contrastive Regularization and Pixel-Level Multiple Instance Learning", **under review**.

[J-01] **Seonghui Min**, Won-Ki Jeong "ZoomISEG: Interactive Multi-Scale Fusion for Histopathology Whole Slide Image Segmentation", *Journal of the Korea Computer Graphics Society* (**KCGS**), 2023.

Teaching

Special Lecture for Computer Science (COSE490) *Fall 2022*
Teaching Assistant, Korea University

Data Structure (COSE213) *Spring 2022*
Teaching Assistant, Korea University

Academic Activities

Biomedical Engineering Academic Team | Korea University *Fall 2020 - Spring 2021*
Group Member

- Studied deep learning theories and participated in research paper seminars

Honors and Awards

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

3rd place award | Korea University Campus CEO Start-Up Competition - *Team Leader* (Fall 2020)

Skills

Programming

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

Languages

- English: TOEFL 107/120
- Korean: Native