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
M.S. in Computer Science and Engineering   *Mar. 2022 - Feb. 2024*
Advisor: Won-Ki Jeong

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

Research Experience

High-performance Visual Computing Lab   Seoul, South Korea
Research Assistant @ Korea University   *Sep. 2021 - Mar. 2024*
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

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

- 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

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

3rd Place, 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