Seonghui Min

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Research Interests

Deep Learning, Computer Vision, Generative Models, Data-Efficient Learning, 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)

[C-3] **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-2] SeungKyu Kim, Hyun-Jic Oh, **Seonghui Min**, Won-Ki Jeong, "Evaluation and improvement of Segment Anything Model for interactive histopathology image segmentation"
MICCAI Workshop on Foundation Models for General Medical AI, 2023

[C-1] **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-2] 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 at Computers in Biology and Medicine

[J-1] **Seonghui Min**, Won-Ki Jeong, "ZoomISEG: Interactive Multi-Scale Fusion for Histopathology Whole Slide Image Segmentation"
Journal of the Korea Computer Graphics Society, 29(3), 2023

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