Hyun-Jic Oh

VISION AI RESEARCHER · PHD STUDENT @ KOREA UNIVERSITY

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Summary

Ph.D. candidate in Computer Science at HVCL (High Performance Visual Computing Lab), Korea University. Greatly eager to develop deep learning algorithms for medical image analysis. Published several papers for image processing with deep learning algorithms (image segmentation, classification and generation). Recent interest on diffusion models for biomedical data generation to improve the model performance.

Publications

Co-synthesis of Histopathology Nuclei Image-Label Pairs using a Context-Conditioned Joint Diffusion Model — *ECCV 2024*

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

- European Conference on Computer Vision (ECCV) 2024

Controllable and Efficient Multi-Class Pathology Nuclei Data Augmentation using Text-Conditioned Diffusion Models — *MICCAI 2024*

Hyun-Jic Oh, Won-Ki Jeong — *Conference*

- International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2024

Evaluation and improvement of Segment Anything Model for interactive histopathology image segmentation — *MICCAIW 2023*

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

- MICCAI 2023 1st International Workshop on Foundation Models for General Medical AI (MedAGI)

DiffMix: Diffusion Model-based Data Synthesis for Nuclei Segmentation and Classification in Imbalanced Pathology Image Datasets — *MICCAI 2023*

Hyun-Jic Oh, Won-Ki Jeong — *Conference*

- International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2023

MitoVis: A Unified Visual Analytics System for End-to-End Neuronal Mitochondria Analysis — *IEEE TVCG 2023*

JunYoung Choi, Hyun-Jic Oh, Hakjun Lee, Suyeon Kim, Seok-Kyu Kwon, Won-Ki Jeong — *Journal*

- IEEE Transactions on Visualization and Computer Graphics (TVCG), 2023

Scribble-Supervised Cell Segmentation Using Multiscale Contrastive Regularization — *IEEE ISBI 2022*

Hyun-Jic Oh, Kanggeun Lee, Won-Ki Jeong — *Conference*

- IEEE International Symposium on Biomedical Imaging (ISBI), 2022

Research Experience

Visual Computing Group — *Harvard Univ., Massachusetts, USA*

VISITING SCHOLAR — *Mar. 2024 - Mar. 2025*

- Project: Image Translation for high-plex immunofluorscence image generation using diffusion models

High Performance Visual Computing Lab — *Korea Univ., Seoul, S.Korea*

PH.D. COURSE — *Aug. 2020 -*

- Research focus on segmentation, generative models and foundation models for medical image processing
- Project: histopathology image analysis, food image classification
- TA: Data structure (Spring 2021, Fall 2021, Spring 2022), Digital Image Processing (Fall 2022)
- Server Manager / Lab Leader

Medical Information Processing Laboratory (MIPL) — *Korea Univ., Seoul, S.Korea*

UNDERGRADUATE RESEARCHER — *Mar. 2019 - Jun. 2019*

- Project: Image Reconstruction Demo Program Development - Virtual simulation tool which can control various variables (The number of photons, noise, and reconstruction methods, etc.)
- TA: Biomedical Signal Processing (Spring 2019)

Program Committees

Education

Korea University   *Seoul, S.Korea*

Ph.D. candidate in Computer Science   *Mar. 2021 -*

- Studying in High Performance Visual Computing (HVCL) Lab - Deep learning for medical image processing
- GPA (4.31/4.5)
- Student Life Advisor by KU Global Service Center (Fall 2023)
- Language Exchange Programs by KU Global Service Center (Spring 2023 - Fall 2023)
- Student Mentor for foreign students by KU Global Service Center (Spring 2023)

Korea University   *Seoul, S.Korea*

B.S. in Biomedical Engineering   *Mar. 2014 - Feb. 2021*

- GPA (4.03/4.5)
- Student Council in Department of Biomedical Engineering (2014 - 2015)
- Biomedical Engineering Academic Team of Korea University (Fall 2018, Spring 2019)
- Volunteer programs for foreign students by KU Global Service Center / KUISC (Summer 2018), KUISA (Fall 2018), KUBA (Fall 2019)
- KU Peer Tutoring Program - Biomedical Signals and Systems (Spring 2019)

Chapman University   *Orange, California, USA*

Exchange Student   *Spring 2020*

- Computer Science courses and mathematics course (biostatistics)
- Club activity: Korean-American Student Association (KASA)

East China Normal University   *Shanghai, China*

KU-China Global Leadership Program   *Summer 2016*

- Intensive Chinese courses (Grade: A+, Class leader)
- HSK level 4 (264/300) in Dec. 2021

Services

2024   **Reviewer,** TMI, MICCAI, MICCAIW (MedAGI)   -
2023   **Reviewer,** TMI, MICCAIW (MedAGI)   -

Education

Korea University   *Seoul, S.Korea*

Ph.D. candidate in Computer Science   *Mar. 2021 -*