

# Hyun-Jic Oh

VISION AI RESEARCHER · PHD STUDENT @ KOREA UNIVERSITY

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## Summary

Ph.D. candidate in Computer Science at the High Performance Visual Computing Lab (HVCL), Korea University. My research focuses on computer vision and medical image analysis, with experience developing deep learning algorithms for image generation, segmentation, classification, and visual foundation models. I have worked on projects involving diffusion model-based data augmentation, image translation, and super-resolution, as well as foundation models (e.g., SAM) and weakly supervised learning. Recently, I have been particularly interested in leveraging diffusion model priors for advanced image processing.

## Publications

### **Virtual Multiplex Staining for Histological Images using a Marker-wise Conditioned Diffusion Model**

AAAI 2026

HYUN-JIC OH, JUNSIK KIM, ZHIYI SHI, YICHEN WU, YU-AN CHEN, PETER K. SORGER, HANSPETER PFISTER, WON-KI JEONG

Conference

- Association for the Advancement of Artificial Intelligence, 2026

### **Zero-shot Volumetric CT Super-Resolution using 3D Gaussian Splatting with Upsampled 2D X-ray Projection Priors**

Arxiv

JEONGHYUN NOH\*, HYUN-JIC OH\*, BYUNGJU CHAE, WON-KI JEONG

Conference

- Arxiv, 2025

### **Spatial-Temporal Pre-Training for Embryo Viability Prediction Using Time-Lapse Videos**

Arxiv

ZHIYI SHI, JUNSIK KIM, HELEN YYANG, YONGHYUN SONG, HYUN-JIC OH, DALIT BEN-YOSEF, DANIEL NEEDLEMAN, HANSPETER PFISTER

Journal

- Arxiv, 2025

### **S2L-CM: Scribble-supervised Nuclei Segmentation in Histopathology Images using Contrastive Regularization and Pixel-Level Multiple Instance Learning**

CIBM

\*HYUN-JIC OH, \*SEONGHUI MIN, WON-KI JEONG

Journal

- Computers in Biology and Medicine, 2025

### **Synthetic Data Augmentation using Pre-trained Diffusion Models for Long-tailed Food Image Classification**

CVPRW 2025

\*GAYEON KOH, \*HYUN-JIC OH, JEONGHYUN NOH, WON-KI JEONG

Conference

- 2nd MetaFood Workshop CVPR, 2025

### **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

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### Visual Computing Group

Harvard Univ., Massachusetts, USA

VISITING SCHOLAR

Mar. 2024 - Mar. 2025

- Project: Image Translation for high-plex immunofluorescence 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

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2023    **Student Contributor**, (AI Challenge) PAIP 2023: TC prediction in pancreatic and colon cancer

IEEE ISBI 2023

## Education

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### Korea University

Seoul, S.Korea

PH.D. CANDIDATE IN COMPUTER SCIENCE

Mar. 2021 - Aug. 2026

- GPA (4.31/4.5)
- High Performance Visual Computing (HVCL) Lab - Computer Vision / Medical Vision
- 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
- HSK level 4 (264/300) in Dec. 2021

## Services

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- 2026 **Reviewer**, [Conference] CVPR, ECCV, AAAI, MICCAI  
2025 **Reviewer**, [Journal] TMI, MIA, TMM, EAAI [Conference] MICCAI  
2024 **Reviewer**, [Journal] TMI, [Conference] MICCAI, MICCAIW (MedAGI)  
2023 **Reviewer**, [Journal] TMI [Conference] MICCAIW (MedAGI)