Jihyeon Je

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RESEARCH INTERESTS

My interests lie at the intersection of geometry/structure processing, 3D vision, and machine learning. I am particularly interested in extracting and learning hidden geometric structures that underlie complex data for various downstream tasks such as shape synthesis and deformation.

EDUCATION

Stanford University **Stanford, CA**
PhD Student in Computer Science Sept 2023 – present
Advised by **Prof. Leonidas Guibas**

Duke University **Durham, NC**
BSE in Electrical & Computer Engineering and Biomedical Engineering 2019 – 2023
BS in Computer Science with a concentration in AI and Machine Learning
2020 Woo Fellow, 2022/21 DTech Scholar | GPA: 3.85/4.0

WORK EXPERIENCE

Duke University, Lafata Lab **Durham, NC**
Undergraduate Researcher May 2020 – May 2023

- Synthetic 3D spatio-temporal data generation with Fokker-Planck dynamics for radiology
- Advisor: Kyle Lafata

Schrödinger, Machine Learning Team **New York, NY**
Machine Learning Intern May 2022 – Aug 2022

- Diffusion generative model for ligand 3D conformation generation and geometric feature extraction to improve conformer quality and small molecule property prediction
- Mentor: Zachary Kaplan

Broad Institute of MIT and Harvard, Imaging Platform, Cimini Lab **Cambridge, MA**
Research Intern May 2021 – Aug 2021

- Image analysis tools and workflow development for 2D and 3D image segmentation and reconstruction
- Optimized strategies and network architectures for sparse and limited bioimage data
- Mentors: Beth Cimini, Anne Carpenter

National Center for Microscopy and Imaging Research, Mark Ellisman Lab **San Diego, CA**
Research Intern May 2017 – Mar 2020

- 3D reconstruction and segmentation of electron microscope images and feature extraction from large-scale biological data
- Mentor: Matthias Haberl

TEACHING EXPERIENCE

Signals and Systems (ECE 280) **Durham, NC**
Lab Assistant, Duke University Jan 2021 – Jan 2023

- Held lab sessions, office hours, and provide tutoring for students in Electrical & Computer Engineering 280: Signals and Systems

PUBLICATIONS

[1] **Je J**, Liu J, Yang G, Deng B, Cai S, Litany O, Guibas L. Robust Symmetry Detection with Riemannian Langevin Dynamics. SIGGRAPH ASIA, 2024.

[2] Stevens J, Riley B, **Je J**, Gao Y, Wang C, Mowery Y, Brizel D, Yin F, Liu J, Lafata K. Radiomics on spatial-temporal manifolds via Fokker-Planck dynamics. Medical Physics, 2023.

[3] Haberl M, Wong W, Penticoff S, **Je J**, Madany M, Borchhardt A, Boassa D, Peltier S, Ellisman M CDeep3M–preview: Online segmentation using the deep neural network model zoo. Preprint.

CONFERENCE PROCEEDINGS

[1] Stevens J, **Je J**, Gao Y, Wang C, Mowery Y, Brizel D, Yin F, Liu J, Lafata K. Radiomics on spatial-temporal manifolds via Fokker-Planck dynamics. American Association of Physicists in Medicine. 2022. Poster presentation delivered at the AAPM meeting, September, 2022.

[2] Sotolongo G, **Je J**, Li X, Wang Y, Zee J, Wang B, Chen Y, Talawalla T, Hodgin J, Madabhushi A, Ozeky T, Mariani L, Holzman L, Janowczyk A, Barisoni L, Lafata K. Segmentation and Classification of Lymphocytes in the NEPTUNE Digital Kidney Biopsies via PatchSorter. United States and Canadian Academy of Pathology abstract. 34:847. Poster presentation delivered at the USCAP meeting, March, 2022.

[3] **Je J**, Lucas A, Sterling D, Cimini B. Network Optimization with Limited Bioimage Data for Robust Semantic Segmentation. Society of Biomolecular Imaging and Informatics. 2nd Place Best Poster Award, presentation delivered at the 2021 High Content meeting, remote, October, 2021.

[4] Sotolongo G, **Je J**, Zee J, Chen Y, Li X, Wang Y, Hodgin J, Madabhushi A, Janowczyk A, Lafata K, Barisoni L. Cortical Tubulointerstitial Mononuclear Inflammation in Renal Biopsies is a quantitative Biomarker of Clinical Outcomes in NEPTUNE Glomerular. United States and Canadian Academy of Pathology abstract 34:847. Poster presentation delivered at the USCAP meeting, remote, October, 2020.

SELECTED AWARDS

School of Engineering Fellowship, *Stanford University* 2023 – 2024
Woo Fellow for Big Data and Precision Health, *Duke University* 2020 – 2021