

# Jihyeon Je

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## Education

### Stanford University

Ph.D. Student in Computer Science

Stanford, CA

Sept 2023 -

### Duke University

BSE in Biomedical Engineering and Electrical & Computer Engineering,  
BS in Computer Science with a concentration in AI and Machine Learning  
2020 Woo Fellow, 2022/21 DTech Scholar | GPA: 3.8/4.0

Durham, NC

May 2023

## Research Experience

### Duke University, Lafata Lab

Undergraduate Researcher

Durham, NC

May 2020 – May 2023

- Developing an automatized feature extraction tool for the analysis of next generation pathomic signatures of inflammation from renal biopsy data
- Generation of synthetic time series image data using Fokker-Planck dynamics to create prediction models for head-and-neck cancer

### Schrodinger, Machine Learning Team

Machine Learning Intern

New York, NY

May 2022 – Aug 2022

- Implemented diffusion-based generative model for ligand conformation generation to improve conformer quality
- Introduced new features and Gaussian processes to supervised regression and classification models and improved small molecule property prediction
- Devised and implemented automated routine for benchmarking and backtesting

### Broad Institute of MIT and Harvard, Imaging Platform, Cimini Lab

Research Intern

Cambridge, MA

May 2021 – Aug 2021

- Built ML-based image analysis tools and workflows for 2D and 3D image segmentation and reconstruction
- Devised optimized strategies and network architectures to efficiently utilize sparse and limited bioimage data

### Duke University, Caron Lab

Undergraduate Intern

Durham, NC

Sept 2019 – Mar 2020

- Worked on 3D reconstruction and statistical analysis of dendritic spines from EM images

### NCMIR (National Center for Microscopy and Imaging Research), Mark Ellisman Lab

Intern

San Diego, CA

May 2017 – Mar 2020

- Worked on 3D computational reconstruction and segmentation of electron microscope images
- Contributed to CDeep3M-Preview by building the augmentation pipeline and wrote additional image analysis scripts for feature extraction from large-scale biological data

## Teaching Experience

### Duke University Department of Electrical and Computer Engineering

Teaching Assistant

Durham, NC

Jan 2021 – Jan 2023

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

## Additional Experience

### Wolfram Alpha

2018 Wolfram Summer School Alumni, Student Ambassador

Remote

May 2018 – May 2023

- Research focus on mathematical and computational analysis of the structure of viral capsids
- Developed the Protein Database Data Importer Function for the Mathematica functionality repository

## Publications

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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. In submission

Haberl M.G., Wong W., Penticoff S., **Je J.**, Madany M., Borchhardt A., Boassa D., Peltier S.T., Ellisman M.H. CDeep3M-preview: Online segmentation using the deep neural network model zoo. [Preprint](#)

## Conference Proceedings

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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.

Sotolongo G, **Je J**, Li X, Wang Y, Zee J, Wang B, Chen Y, Talawalla T, Hodgins 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.

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

Sotolongo G, **Je J**, Zee J, Chen Y, Li X, Wang Y, Hodgins 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.