Clayton W. Seitz

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EDUCATION

Doctor of Philosopy, Physics
Purdue University
Thesis: *Advancing super-resolution microscopy for quantitative in-vivo imaging of chromatin nanodomains*

Master of Science, Biophysics
University of Chicago

Bachelor of Science, Physics, Magna Cum Laude
Indiana University
Minor: Mathematics

Bachelor of Science, Informatics, Magna Cum Laude
Luddy School of Informatics, Computing, and Engineering, Indiana University
Concentration: Mathematics

EXPERIENCE

Graduate Researcher 2021-Present
Indiana University, Indianapolis, IN

- Designed diffusion models/score-based generative models and general computer vision techniques (object detection, segmentation, etc.) in PyTorch for modeling image datasets in super-resolution fluorescence microscopy
- Developed general probabilistic models for high-dimensional imaging datasets and associated Bayesian methods for statistical inference tasks
- Developed novel microscopy systems for super-resolution imaging of living cells
- Investigated the impact of point mutations of epigenetic proteins on the structure of nucleosome nanodomains and complement experimental data with molecular dynamics simulations

Graduate Researcher 2020-2021
University of Chicago, Chicago, IL

- Utilized fluorescence microscopy to measure temporal dynamics of calcium concentration in MIN6 cells
- Performed Monte Carlo simulations of cellular networks to relate network architecture to calcium dynamics

Research Assistant 2019-2020
Indiana University, Indianapolis, IN

- Developed a scientific package in Python for high-throughput object detection and tracking
- Managed the package lifecycle and user training throughout the laboratory

Job Center Assistant 2018-2019
Indianapolis Public Library, Indianapolis, IN

- Provided excellent customer service to library patrons while applying for new jobs

- Edited resumes and led instructional sessions on resume writing and job search tools

AWARDS

NIH Graduate Training Fellowship   2020
University of Chicago, Chicago, IL

Travel Award and Lightning Talk Invitation   2019
Physical Sciences in Oncology - Minneapolis, MN

Hudson and Holland Scholarship for Diversity and Inclusion   2013-2017
Indiana University, Bloomington, IN

Founders Scholar   2013-2017
Indiana University, Bloomington, IN

Cigital Scholarship   2016-2017
Indiana University, Bloomington, IN

TECHNICAL SKILLS

Linux, Bash, Python, R, PyTorch, C/C++, SQL, LaTeX, Git, Docker, SLURM