Trevor J. Chan

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Education

Yale University — *New Haven, CT*

Bachelor of Science, Engineering Sciences Mechanical | Bachelor of Arts, Architecture — *2016 - 2020*

University of Pennsylvania — *Philadelphia, PA*

PhD Candidate, Bioengineering — *2021 - Present*

Selected Publications

CT super-resolution enables accurate estimation of trabecular structure and mechanical strength in the proximal femur† — *10.1148/ryai.220251*

Radiology Artificial Intelligence — *Sep 2023*

Learning the Domain Specific Inverse NUFFT for Accelerated Spiral MRI using Diffusion Models† — *10.1109/ISBI56570.2024.10635304*

IEEE ISBI — *Jul 2024*

SAM3D: Zero-Shot Semi-Automatic Segmentation in 3D Medical Images with the Segment Anything Model† — *10.48550/arXiv.2405.06786*

Arxiv — *Aug 2024*

Jamming of nephron-forming niches in the developing mouse kidney creates cyclical mechanical stresses — *10.1038/s41563-024-02019-3*

Nature Materials — *Sep 2024*

Biophysical informatics reveals distinctive phenotypic signatures and functional diversity of single cell lineages† — *10.1093/bioinformatics/btac833*

Bioinformatics — *Jan 2023*

Compression drives diverse transcriptomic and phenotypic adaptations in melanoma — *10.1073/pnas.2220062120*

PNAS — *Sep 2023*

Morphodynamic signatures of MDA-MB-231 single cells and cell doublets undergoing invasion in confined microenvironments — *10.1038/s41598-021-85640-5*

Nature: Scientific Reports — *Mar 2021*

A microfluidic-informatics assay for quantitative physical occlusion measurement in sickle cell disease — *10.1039/D2LC00043A*

Lab on a Chip — *Feb 2022*

Experience

Penn Image Computing and Science Lab, Laboratory for Structural, Physiological, and Functional Imaging — *Philadelphia, PA*

Researcher — *Sep 2021 - Present*

- Conducting doctoral research on the use of generative AI to solve inverse problems in medical imaging.
  Advised by Alison Pouch, PhD. and Chamith Rajapakse, PhD.

Multiscale Mechanobiology Lab — *New Haven, CT*

Research Technician — *Jun 2020 - Jun 2021*

- Developed code and experimental methods to analyze cancer cell network behavior.
  Utilized computer vision and bioinformatics to characterize metastatic behavior of single-cells and cell-collectives.
  Advised by Michael Mak, PhD.

IvyTech Designs — *New Haven, CT*

Chief Technology Officer — *Jan. 2020 - Present*

- Designing novel surgical implements for orthopedic and neurological surgery

†First Author

Honors & Awards

2023	**NSF Graduate Research Fellowship**, Recipient of the National Science Foundation Graduate Research Fellowship	*Philadelphia*
2022	**Mission Brain Neurosurgical Hackathon 1st place**, Winner of the international neurosurgical hackathon hosted by Mission Brain NGO, Harvard Medical School, and MIT	*Cambridge*
2020	**Connecticut Bioscience Pipeline Fund**, Winner of the Bioscience pipeline award funding the continued development of a novel biomedical device	*Connecticut*
2020	**Rothberg Catalyzer Prototype Fund**, Winner of the Prototype Fund for development of a novel biomedical device	*Connecticut*
2019	**Solar Decathlon Design Challenge Finalist**, Author of the finalist submission to the Solar Decathlon Design Challenge 2019 conference	*Golden, CO*
2018	**Dean's Fellowship in the Sciences**, Recipient of the Dean's Research Fellowship in the Sciences funding Summer research at Yale University	*New Haven, CT*
2017	**Light Fellowship Recipient**, Recipient of the Richard U. Light Fellowship funding language study in Beijing	*New Haven, CT*