Cindy M. Nguyen

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INTERESTS | Computational photography, computational imaging, computer vision, deep learning

EDUCATION

PhD	Stanford University	Electrical Engineering	2019 - Present
MS	Stanford University	Electrical Engineering (GPA 3.69/4.00)	2019 - 2021
BS	Stanford University	Bioengineering (GPA 3.90/4.00)	2015 - 2019

Relevant Coursework | Geometric and Topological Data Analysis, Fourier Optics, Modern Optics, Convex Optimization, Linear Dynamical Systems, CNNs, ML, AI, Meta-Learning, Decision Making under Uncertainty, NLP

RESEARCH

Stanford Computational Imaging Lab | PhD Candidate

Jan 2020 – Present | Stanford University
Advised by Prof. Gordon Wetzstein.
Publications

Depth from Defocus with Learned Optics for Imaging and Occlusion-Aware Depth Estimation.
Ikoma, H., Nguyen, C.M., Peng, Y., Metzler, C., Wetzstein, G. ICCP, 2021.

Brian Feldman Lab | Research Assistant

Sep 2017 – Mar 2019 | Stanford University
Performed RNA-Seq analysis in mature adipocytes to identify metabolic systemic cues for diabetes.

Markus Schwaninger Lab | Research Assistant

July 2018 – Sept 2018 | Universität zu Lübeck, Lübeck, Germany
Investigated leptin transport across the blood-brain barrier in porcine cortical endothelial in vitro models.

Stanley Qi Lab | Research Assistant

Mar 2016 – Feb 2018 | Stanford University
Developed chemically-inducible CRISPR/dCas9-based dimerization systems for human chromatin 3D organization and spatiotemporal gene dynamics tracking through live cell imaging.
Publications

CRISPR-Mediated Live Imaging of Genome Editing and Transcription.
Wang, H., Nakamura, M., Abbott, T.R., Zhao, D., Luo, K., Yu, C., Nguyen, C.M., …, Qi, L.S. Science, 2019.
CRISPR-Mediated Programmable 3D Genome Positioning and Nuclear Organization.
Wang, H., Xu, X., Nguyen, C.M., Liu, Y., Gao, Y., Lin, X., Daley, T., Kipniss. N.H., La Russa, M., Qi, L.S. Cell, 2018.
Press: Stanford Medicine, Stanford Daily, Quanta, Science

SELECTED PROJECTS

Noise vs. Blur | Jan 2021 – Present

Understanding complementary relationship between short and long exposures. Developing a network that can utilize information from different exposures with varying noise instantiations. Tools: PyTorch.

Depth from Defocus with Learned Optics | Aug 2020 – Jan 2021

Published in ICCP 2021. Personal contributions include rendering ground truth examples in Blender, running analyses of baseline models, designing 3D print-outs for building the camera prototype, PSF and demo captures with prototype.
Tools/Skills: PyTorch, Blender, Onshape, real-life capture, PSF calibration.

Focusing Curved Focal Planes in Microscopy | June 2020 – Sep 2020

Designed a DOE to place in front of the sensor to capture non-shift invariant curved focal surface in a microscopy set-up for COSMOS applications. Tools: Zemax.

HONORS

NSF GRFP, Generation Google Scholarship, German Academic Exchange Service Scholarship, Stanford Bio-X Undergrad Research Fellowship, NSF Undergrad Research Fellowship, Google igniteCS Grant

TECHNICAL SKILLS

Experienced | PyTorch, Python, MATLAB
Familiar | Onshape, Blender, Zemax, ImageJ, InkScape