

# Fanglin Linda Liu

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**Summary:** Ph.D. student with 5+ years of research experience in optical imaging and 2 internship experiences as an optical engineer. Applying for a full-time position starting in December 2021.

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## EDUCATION

### University of California, Berkeley

2016 – Expected 12/2021

Ph.D. Candidate, Electrical Engineering and Computer Sciences, GPA 3.96

Advisor: Prof. Laura Waller

### Tsinghua University

2012 – 2016

Bachelor of Science: Department of Precision Instrument, rank 1%

Major in Optical Engineering. Minor in Management

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## EXPERIENCE

### INTERNSHIP

#### Optical Engineer Intern | Microsoft Research

12/2020 – 03/2021

Project Silica, store long-term data in quartz glass

- Modeled in Zemax OpticStudio a polarization microscope and built the microscope in the lab.
- Delivered a new polarization microscope with 30% higher data-reading accuracy, highly praised by the whole team.
- Help 4 team members take data using the new system to support their research progress.

#### Optical Engineer Intern | LightlC Technologies

06/2020 – 08/2020

Early-stage Solid-state Lidar Startup

- Modeled in Zemax OpticStudio the free-space to waveguide coupling efficiency.
- Designed a doublet lens and worked with the manufacturer to fabricate and assemble the doublet lens.
- Built a prototype with the manufactured lens within 6 weeks, and achieved 20% higher coupling efficiency.

### RESEARCH

Full publication list on [Google Scholar](#)

#### Graduate Researcher | University of California, Berkeley

08/2016 – Present

Advisor: Prof. Laura Waller. Project: Computational 3D Microscopy

- Designed and built a 3D fluorescent microscope to detect depth information from a single image.
- Designed a relay lens to remove spherical aberration in Zemax OpticStudio.
- Modeled light propagation using wave optics in Python and MATLAB.
- Learned the freeform optics using data-driven machine learning with PyTorch and TensorFlow.
- Reconstructed the neuron activity in a 3D freely-moving animal by solving a sparsity-constrained inverse problem.

#### Undergraduate Researcher | Stanford University

06/2015 – 08/2015

Advisor: Prof. Craig S. Levin. Project: Radiology Imaging.

- Programmed to calculate the energy resolution of a radiology imaging system from 10 TB data.
- Improved the detector resolution by 40% by co-optimizing experimental settings and data processing algorithms.

### TEACHING

- Head Content TA for EE16A. Led the content team to create weekly course materials and exams for 800 students.
- Undergraduate research Mentor. Mentored 5 undergrads through Research Experiences for Undergraduates programs.

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## SKILLS

- Programming Languages: MATLAB (5 years), Python (4 years), PyTorch (2 years), TensorFlow (2 years)
- Software: Zemax OpticStudio (3 years), SOLIDWORKS (1 year), CAD (1 year)
- Laboratory skills: optical system alignment (5 years), lens design (1 year), prototyping