# Fanglin Linda Liu

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## EXPERIENCE

### (Google) X, the moonshot factory - Hardware Sensing Engineer
02/2022 – present

Everyday Robots: Helper robots that can learn by themselves.

- Defined the sensing architecture for the next-generation robot, including a safety sensing system and a 360-degree robotic vision system.
- Collaborated with cross-functional teams to develop a sensing architecture that balances product requirements, software and hardware complexity, safety and cost.
- Prototyped direct time-of-flight (dToF) sensors and indirect time-of-flight (iToF) cameras for cliff detection and obstacle detection.
- Evaluated thermal sensors with microbolometer and thermopile for human detection.

### University of California, Berkeley - Ph.D. Student Researcher
08/2016 – 02/2022

End-to-end Single-shot 3D Microscopy: Measure depth from a single image.

- Designed a single-shot 3D Microscope: wave-optics light propagation using Python and MATLAB, ray tracing and multi-elements lens design using Zemax OpticStudio, hands-on optical system alignment in the lab.
- Reconstructed 3D freely-moving objects by solving a sparsity-constrained inverse problem.
- Optimized a freeform optics surface and reconstruction parameters simultaneously using machine learning techniques in PyTorch and TensorFlow.

### Microsoft Research - Optical Engineer, Intern
12/2020 – 03/2021

Project Silica: Store long-term data in quartz glass using polarization optics.

- Modeled a polarization microscope using Zemax OpticStudio and built it in the lab.
- Improved the data-reading accuracy by 30%, highly praised by the whole team.
- Assisted 4 team members to take data using the new microscope to advance their research.

### LightIC Technologies - Optical Engineer, Intern
06/2020 – 08/2020

Early-stage Solid-state Lidar Startup

- Modeled the free-space to waveguide coupling efficiency using Zemax OpticStudio.
- Designed a doublet lens and worked with the manufacturer for fabrication and assembly.
- Built a prototype within 6 weeks, resulting in a 20% improvement in coupling efficiency.

## EDUCATION

### University of California, Berkeley
08/2016 – 05/2022

Ph.D. Candidate, Electrical Engineering and Computer Sciences, GPA 3.96.
Advisor: Prof. Laura Waller.
Full publication list on Google Scholar.

### Tsinghua University
08/2012 – 07/2016

Bachelor of Science: Department of Precision Instrument, rank 1%.
Major in Optical Engineering. Minor in Management.