Fanglin Linda Liu

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EXPERIENCE

Skydio - Camera Engineer   May 2023 – Present

Skydio X10: Autonomous flying drones with the most advanced sensing system.

- Contributed to the development of auto-focus Narrow, Wide, Telephoto cameras and fixed-focus WFOV navigation cameras for Skydio X10 drone, with my work featured in company's 2023 keynote.
- Managed joint-development with module and lens suppliers in Asia, driving DOEs on module active-alignment process to improve product yield by over 40% from EVT to mass production
- Led camera module IQC at Skydio manufacture factory for MTF, optical center, blemish, AWB, and other metrics. Conducted GR&R. Improved OQC-IQC correlation and transitioned to IQC sampling.
- Led next-gen camera spec definition, supplier sourcing, sensor and lens bench evaluation.

(Google) X, the moonshot factory - Hardware Sensing Engineer   Feb 2022 – Apr 2023

Everyday Robots: Humanoid robots with a generative AI brain.

- Defined the sensing architecture for the next-generation humanoid robot, including a 360-degree robotic vision system and a safety sensing 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, indirect time-of-flight (iToF) cameras and thermal sensors for obstacle detection and human detection.

University of California, Berkeley - Ph.D.   Aug 2016 – Feb 2022

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

- Designed a single-shot 3D Microscope, including wave-optics light propagation using Python and MATLAB, ray tracing and multi-elements lens design using Zemax OpticStudio.
- Built the fluorescence microscope in the laboratory with more than 10 optical elements, achieving the designed system performance.
- 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.

Microsoft Research - Optical Engineer, Intern   Dec 2020 – Mar 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%, assisted team members to collect data using the new microscope, results highlighted in the 2023 Microsoft Research project update.

EDUCATION

University of California, Berkeley   Aug 2016 – May 2022

Ph.D. in Electrical Engineering and Computer Sciences. Advised by Prof. Laura Waller.

Tsinghua University   Aug 2012 – Jul 2016

Bachelor in Department of Precision Instrument. Major in Optical Engineering. Minor in Management.

SKILLS

Python, MATLAB, Imatest, Zemax, Optical lab prototyping