

# ALEXANDER KRISTOFFERSEN

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## EDUCATION

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### University of California, Berkeley

**M.S. in Electrical Engineering & Computer Science** August 2022 - May 2023

- Emphasis on computer vision and graphics, advised by Prof. Joseph Gonzalez
- Technical Report: LoopNeRF: Exploring Temporal Compression for 3D Video Textures

**B.S. in Electrical Engineering & Computer Science, GPA: 3.93** August 2018 - May 2022

- Eta Kappa Nu (EECS honors society) officer, Accel Scholar

### Relevant Coursework:

Signals and Systems, Operating Systems, Optimization Models, Probability, Comp. Photography and Computer Vision, Machine Learning, Parallel Computing, Computer Graphics, Deep Neural Networks

## EXPERIENCE

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**Skydio** July 2023 - Present

*Autonomy Engineer - Computer Vision (3D Vision)* San Mateo, CA

- Shipped Skydio's Onboard modeling product on the X10 drone, building high-quality photogrammetry models under strict on-device compute limitations. (Python, C/C++)
- Led efforts researching 3D Gaussian splatting as an addition to the photogrammetry pipeline.
- Aided in the development and characterization of RTK-GPS for high-accuracy mapping.

**Google** May 2022 - August 2022

*Software Engineer Intern* Sunnyvale, CA

- Within core data team, worked to increase reliability of Semantic Understanding pipeline, who's internal customers span all major products within Google.
- Increased prediction accuracy of incoming requests by 80% for reliable loadbalancing/loadshedding with minimal additional overhead. (Python, C/C++)

**Berkeley Sky Computing Lab (formerly RISELab)** August 2020 - May 2022

*Undergraduate Researcher in Computer Vision* Berkeley, CA

- Researched view-synthesis techniques for generating 6DOF experiences of static scenes on untethered headsets using a novel volumetric representation for real-time rendering. (Python, OpenCV, PyTorch)

**Butterfly Network Inc.** May 2021 - August 2021

*Research Scientist - Machine Learning Intern* New York, NY

- Part of Butterfly's Deep Learning Team, developing models to run on a handheld ultrasound device at a fraction of the cost of standard machines. (Python, Tensorflow, C/C++, Swift)
- Developed IMU sensor fusion infrastructure and models to aid in education and visual accuracy.
- Bootstrapped from low-level driver code, requiring design up through S3 backend and tensorflow models.

## PROJECTS

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**Nerfstudio: A Collaboration Friendly Studio for NeRFs** May 2022 - Present

- Developer for Nerfstudio, an open-source API for creating, training, and viewing NeRFs and 3DGSs.
- Built multiple user-facing features, including camera pose optimization, Google Colab support, equirect-angular image support, and extensive documentation for a project with almost 10,000 GitHub stars.

## TECHNICAL STRENGTHS

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**Languages/Skills:** Python, C++, C, Java, SQL, Assembly (RISC-V, x86), Unit Testing, CUDA, Bash

**Tools:** Vim, VSCode, Docker, Valgrind, GDB, Jupyter Notebook, Git, Arduino, Unix, PyTorch, Tensorflow