

# Philip Jacobson

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Third year Electrical Engineering and Computer Science PhD student at UC Berkeley. Currently interested in computer vision, 3D perception, and photonic AI acceleration.

## EDUCATION

### University of California, Berkeley

Aug 2019-Present

PhD, Electrical Engineering and Computer Science GPA: 3.93/4.00  
Expected Graduation: May 2024  
NDSEG Fellow, 2021-2024

### Cornell University

Aug 2015-May 2019

Bachelor of Arts, Physics GPA: 3.99/4.00 *Magna Cum Laude*  
Honors: Phi Beta Kappa, Howard Milstein Scholar (Spring '19), Howard Milstein Book Award (Spring '19), Dean's List (Fall '15 – Fall '18)

### HRL Laboratories *Research Intern*

June 2021-Present

Manager: Heiko Hoffmann

Researching zero and few-shot learning for image recognition. Leveraging a parts-based approach, developed a novel few-shot learning approach using that outperforms the baseline on a wide range of image recognition tasks. Implemented algorithm and ran experiments using PyTorch.

### UC Berkeley *Graduate Student Researcher*

Aug 2019-Present

Advisor: Ming Wu

#### Project 1: Photonic Reservoir Computing

Simulated novel brain-inspired RNN and CNN architectures for image recognition problems using Python/TensorFlow. Implemented design on combination of photonic hardware and FPGAs. Designed a novel hardware configuration capable of 10x increase in training speed relative to digital CNN implementation. Work accepted for publication in Journal of Lightwave Technology.

#### Project 2: 3D Perception

Researching novel 3D perception and tracking algorithms for autonomous driving that leverage fusion with Lidar and Camera data.

### Cornell Atomic Physics *Research Assistant*

Jan 2018-May 2019

Advisor: Carl Franck

Designed and ran an experiment at Cornell's High Energy Synchrotron Source. Wrote Python software to analyze several Terabytes of x-ray scattering data. Ran software on computing cluster to speed-up data processing. Presented results at American Physical Society March Meeting.

### Transfer-to-Excellence Mentor

June 2021- Present

Mentoring a community college student from an underserved community interested in pursuing a degree in engineering. Developed an independent research project for him to pursue while providing academic and career guidance.

**Languages:** Python (NumPy, Pandas, Scikit-learn), Java, C/C++, MATLAB, HTML, CSS, JavaScript

**Frameworks:** PyTorch, TensorFlow, Keras

## EXPERIENCE

## SKILLS\OTHER