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)

EXPERIENCE

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.

SKILLS\OTHER

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