Stephen Phillips

(714) 388-2104 | contact@stephenphillips.xyz | stephenphillips.xyz

Education

University of Pennsylvania
Ph.D. in Computer Science (Advisor: Kostas Daniilidis) — *August 2014 - May 2021*

University of Pennsylvania
M.Sc. in Computer Science — *August 2014 - June 2016*

University of California, Los Angeles
B.S. in Computer Science (GPA 3.97) — *August 2010 - June 2014*

Experience

Roboticist, Applied Scientist — May 2023 - Present
Robotics and AI Institute (Formerly Boston Dynamics AI Institute) — *Cambridge, MA*

- Designed a hardware test workflow for team's trained reinforcement-learning based policies for safe deployment on physical robots outside of simulation.
- Developed a sonar-camera fusion pipeline for indoor navigation on our legged robot platform, reducing collisions in low-texture and cluttered environments.
- Built semantic mapping pipelines combining self-supervised visual features (e.g., DINO) with LiDAR odometry to enable semantic-based terrain traversability assessment downstream.

Visiting Assistant Professor — September 2021 - May 2023
Swarthmore College — *Swarthmore, PA*

- Mentored two students on senior thesis projects. See Teaching section for classes taught.
- Mentored five undergraduate students in extracurricular multi-sensor fusion and machine learning projects, all five continued to graduate programs in CS/engineering.

Waymo Perception Research Intern — May 2021 - July 2021
Waymo — *Remote*

- Conducted research on multi-sensor fusion of camera and radar models for autonomous driving in adverse weather conditions.
- Implemented camera-radar sensor data fusion components for the model training pipeline.

Google Software Engineering Intern — June 2017 - September 2017
Google — *Mountain View, CA*

- Worked on Project Tango (later Daydream), researching machine learning techniques to improve inertial measurement unit (IMU) accuracy on smartphones.
- Implemented IMU data processing pipeline to analyze sensor performance across diverse real-world scenarios.

Publications

Xiaoyi Cai, Siddharth Ancha, Lakshay Sharma, Philip R Osteen, Bernadette Bucher, **Stephen Phillips**, Jiuguang Wang, Michael Everett, Nicholas Roy, and Jonathan P How. 2024. Evora: Deep evidential traversability learning for risk-aware off-road autonomy. IEEE Transactions on Robotics (2024).

Stephen Phillips and Kostas Daniilidis. 2019. All graphs lead to Rome: Learning geometric and cycle-consistent representations with graph convolutional networks. CVPR 2019 Image Matching: Local Features and Beyond Workshop (2019).

Andrew Jaegle, **Stephen Phillips**, Daphne Ippolito, and Kostas Daniilidis. 2018. Unsupervised learning of image motion by recomposing sequences. International Conference on Learning Representations (ICLR) (2018).

Andrew Jaegle, **Stephen Phillips**, and Kostas Daniilidis. 2016. Fast, robust, continuous monocular egomotion computation. In Proceedings of the IEEE International Conference on Robotics and Automation (ICRA) 2016, 773–780.

Teaching Experience

Instructor at Swarthmore College August 2021 - May 2023
Swarthmore, PA

- ENGR027/CPSC072 Computer Vision, two times
- ENGR71 - Digital Signal Processing, one time
- ENGR15 - Fundamentals of Digital and Embedded Systems, two times, Co-instructed
- ENGR19 - Numerical Methods and Applications in Engineering

Instructor at University of Pennsylvania August 2015 - May 2020
Philadelphia, PA

- CIS107/VLST209 - Visual Culture through the Computer's Eye, Co-instructed
- MCIT515 - Linear Algebra for Machine Learning - Online, Head TA
- MEAM620 - Advanced Robotics, Lecturer and TA

Early Experience

Undergraduate Researcher August 2013 - July 2014
UCLA Vision Lab under Professor Soatto *Los Angeles, CA*

Android Developer Lead October 2012 - October 2013
UCLA Ozcan Lab *Los Angeles, CA*

Software Engineering Intern June 2013 - August 2013
Google *Venice Beach, CA*

Software Engineering Intern June 2012 - August 2012
Zynx Health *Los Angeles, CA*

Awards and Honors

National Science Foundation Graduate Research Grant Honorable Mention March 2016

Outstanding Reviewer of 3DV 2020 November 2020

Outstanding Bachelor of Science Degree Award (Computer Science) July 2014