Jonah Philion

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EDUCATION

University of Toronto 2019-
Ph.D. Candidate, Computer Science
Advised by: Prof. Sanja Fidler

Harvard University 2014-2018
B.S. in Physics and Math (cum laude), minor in Computer Science

EXPERIENCE

NVIDIA, Research Scientist 2019-
Member of Sanja Fidler's team, working on simulation, perception, and planning in collaboration with self-driving teams.

ISEE Inc., Research Engineer 2018-2019
First perception team hire under Wongun Choi. Designed, implemented, and deployed lane detection and mapping algorithms for highway driving.

Harvard University, Undergraduate Research Summer 2017
Worked in Prof. Melissa Franklin's group on trigger algorithms for CERN's muon detectors. Co-author of 4 ATLAS internal notes.

Princeton Plasma Physics Laboratory, S.U.L.I. Summer 2016
Worked with Douglass Darrow on Python and MATLAB programs to simulate perturbed particle orbits. Presented findings at APS Physics Conference - San Jose and Harvard-MIT SPS Research Conference.

PUBLICATIONS

Towards Optimal Strategies for Training Self-Driving Perception Models in Simulation
David Acuna*, **Jonah Philion***, Sanja Fidler
NeurIPS, 2021 (in submission)

Learning Indoor Inverse Rendering with 3D Spatially-Varying Lighting
Zian Wang, **Jonah Philion**, Sanja Fidler, Jan Kautz
ICCV, 2021 (oral)

DriveGAN: Towards a Controllable High-Quality Neural Simulation
Seung Wook Kim, **Jonah Philion**, Antonio Torralba, Sanja Fidler
CVPR, 2021 (oral)

Emergent Road Rules In Multi-Agent Driving Environments
Avik Pal, **Jonah Philion**, Yuan-Hong Liao, Sanja Fidler
ICLR, 2021

The Efficacy of Neural Planning Metrics: A Meta-Analysis of PKL on nuScenes
Yiluan Guo, Holger Caesar, Oscar Beijbom, **Jonah Philion**, Sanja Fidler
IROS Workshop on Benchmarking Progress in Autonomous Driving, 2020

Lift, Splat, Shoot: Encoding Images From Arbitrary Camera Rigs by Implicitly Unprojecting to 3D
Jonah Philion, Sanja Fidler
ECCV, 2020

Learning to Simulate Dynamic Environments With GameGAN
Seung Wook Kim, Yuhao Zhou, **Jonah Philion**, Antonio Torralba, Sanja Fidler
CVPR, 2020

Learning to Evaluate Perception Models Using Planner-Centric Metrics
Jonah Philion, Amlan Kar, Sanja Fidler
CVPR, 2020

FastDraw: Addressing the Long Tail of Lane Detection by Adapting a Sequential Prediction Network
Jonah Philion
CVPR, 2019

PATENTS

Generating Frames For Neural Simulation Using One Or More Neural Networks
Seung Wook Kim, **Jonah Philion**, Sanja Fidler
NVIDIA, 2021

Image Generation Using One Or More Neural Networks
Jonah Philion, Sanja Fidler
NVIDIA, 2020

Environment Generation Using One Or More Neural Networks
Seung Wook Kim, Sanja Fidler, **Jonah Philion**, Antonio Torralba
NVIDIA, 2020

Instance Segmentation Imaging System
Jonah Philion, Yibiao Zhao
ISEE, 2019

TALKS

2020 - Uber Advanced Technology Group
2020 - Phiar Technologies

SERVICE

Reviewer for NeurIPS, ICLR, CVPR, ICCV
Course Assistant, CS124 (Data Structures and Algorithms) Spring 2017+2018
Head Course Assistant, Math 21a (Multivariable Calculus) Fall 2017

SKILLS

Python/NumPy, PyTorch, JAX, C/C++, ROS