

LAHAV LIPSON

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EDUCATION

3rd Year Ph.D. Candidate in Computer Science, Princeton University

Advised by Jia Deng, Vision and Learning Lab

B.S. in Computer Science, Columbia University, School of Engineering and Applied Science

Graduated Summa Cum Laude (top 5%), 4.06 GPA

PUBLICATIONS

Coupled Iterative Refinement for 6D Multi-Object Pose Estimation Lahav Lipson

Conference on Computer Vision and Pattern Recognition (CVPR), 2022

- We propose an end-to-end pipeline for estimating 6-DOF object pose from a single image.
- We introduce a differentiable solver layer which jointly optimizes both pose and correspondence, enabling us to dynamically remove outliers to improve accuracy.
- Our method works with-or-without depth input, using one of two variants of our introduced solver layer.
- We achieve state-of-the-art results among published methods on standard benchmarks.

RAFT-Stereo: Multilevel Recurrent Field Transforms for Stereo Matching

International Conference on 3D Vision (3DV), 2021. (Best Student Paper Award)

- We introduce a new deep architecture for rectified stereo from image pairs.
- Our method uses multi-level recurrent updates to refine a high-resolution disparity-field between images.
- Our method is extremely memory efficient, and a version runs in real-time.
- We achieve state-of-the-art results across multiple real-world datasets.

OTHER RESEARCH EXPERIENCE

Dataset Creation

- I developed procedural methods of generating large-scale synthetic data for training deep learning models.
- I have built data annotation pipelines and collected crowd-sourced data at scale. This data is necessary for the development of state-of-the-art machine learning methods to be deployed in the wild.

WORK EXPERIENCE

Amazon Intern

Jun. 2018 – Aug. 2018

Software Developer Engineer

- Designed and developed an AI-based product recommendation system as part of the [Amazon Stores](#) Team.

Teaching Assistant

Computer Vision (Princeton), Algorithms and Data Structures (Princeton), Computer Science Theory (Columbia)

- Wrote and/or graded assignments, held office hours and led precepts and discussions.

ADDITIONAL INDEPENDENT PROJECTS

Developed website for choosing courses at Columbia

Lionscores.com

- Enables students to access relevant course statistics aggregated from course evaluations. The site was accessed 100,000+ times by the Columbia community as of Dec 1st, 2021.

Relevant Software Experience: PyTorch, Python, C++, Java, Blender