Linyi Jin

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Summary

My main research interest is Computer Vision and Robotics Perception, especially 3D vision and recognition.

Education

University of Michigan — **Michigan, USA**
M.S. in Robotics, advised by David Fouhey and Andrew Owens — *2019–2021(expected)*

University of Michigan — **Michigan, USA**
B.S.E. in Computer Science, Summa Cum Lauda — *2017–2019*

Shanghai Jiao Tong University — **Shanghai, China**
B.S.E. in Mechanical Engineering. — *2015–2019*

Publication

Planar Surface Reconstruction from Sparse Views
Linyi Jin, Shengyi Qian, Andrew Owens, David F. Fouhey
Under Review.
- Project Page: `https://jinlinyi.github.io/SparsePlanes/`
- Given two RGB images with an unknown relationship, our system produces a coherent planar surface reconstruction of the scene in terms of 3D planes, plane correspondence, and relative camera pose.

Associative3D: Volumetric Reconstruction from Sparse Views
Shengyi Qian, Linyi Jin*, David F. Fouhey*
European Conference on Computer Vision (ECCV) 2020.
- Project Page: `https://jasonqsy.github.io/Associative3D/`
- Proposed a new approach that estimates reconstructions, distributions over the camera/object and camera/camera transformations, as well as an inter-view object affinity matrix.

Inferring Occluded Geometry Improves Performance When Retrieving an Object from Dense Clutter
Andrew Price, Linyi Jin*, Dmitry Berenson*
International Symposium on Robotics Research (ISRR), 2019
- Augmented a manipulation planner for cluttered environments with a state-of-the-art RGB-D segmentation and constructed a 3D reconstruction perception pipeline to reduce the amount of occluded space to explore.

Work Experience

University of Michigan — **Ann Arbor, MI**
Instructional Aide for EECS 442 Computer Vision — *2019.1–2019.4*
- Re-designed all the assignments in Python and OpenCV. Held office hours, taught recitation classes every week.
- Course website: `https://web.eecs.umich.edu/~fouhey/teaching/EECS442_W19/`

Research Experience

Fouhey AI Lab, University of Michigan — **Ann Arbor, MI**
Graduate Student Research Assistant (GSRA), Advisor: Prof. David Fouhey. — *2019.5–present*
- Working on developing novel algorithms to reconstruct 3D scenes from RGB images.

Autonomous Robotic Manipulation Lab (ARM Lab), University of Michigan — **Ann Arbor, MI**
Independent researcher, Advisor: Prof. Dmitry Berenson, Sponsor: Toyota Research Institute. — *2018.4–2019.4*
- Worked on the MPS project which is published to ISRR 2019.

Michigan Vision & Learning Lab (UMich-vl), University of Michigan — **Ann Arbor, MI**
Undergraduate research assistant, Advisor: Prof. Jia Deng. — *2018.5–2018.8*
- Worked on DARPA's Active Interpretation of Disparate Alternatives (AIDA) Challenge.

Selected Projects

Single-view Surface Normal Prediction — **Ann Arbor, MI**
EECS 442 Computer Vision, Prof. Jia Deng, University of Michigan — *2018.3–2018.4*
- Developed a machine learning model using a Stacked Hourglass Network and proposed a novel loss function to predict the surface normal from a single image.