Yancong Lin
Postdoc on Inductive Knowledge Priors for Visual Perception, TUDelft
⋆ Homepage: http://yanconglin.github.io/
⋆ E-mail: yancong.lin@tudelft.nl, yanconglin0@gmail.com
⋆ Address: Cognitive Robotics, Building 34, Mekelweg 2, 2628 CD, Delft, The Netherlands

Summary

My research focuses on **creating scalable perception models for automated vehicles by pre-wiring deep learning with generic innate priors**. This eliminates the need for large annotation to learn inductive knowledge. My research **enhances the data efficiency of end-to-end learning with built-in differentiable priors**, particularly on scene understanding and 3D reconstruction.

Experience

04/2022 - Now **Postdoc**, Cognitive Robotics, TUDelft.
Working with Dr. Holger Caesar on scalable perception models.

01/2022 - Now **Collaborator**, AIIR Innovation (industrial partner).
3D modeling of engine blades (textureless and repetitive) from a video.

Education

09/2017 - 04/2022 **PhD**, Computer Vision Lab, TUDelft, The Netherlands.
Advisors: *Prof. Marcel Reinders, Dr. Jan van Gemert and Dr. Silvia Pintea.*
PhD Thesis: *Data-efficient learning of geometric structures from single-view images.*

09/2014 - 06/2017 **MEng** in Computer Science, Tianjin University, China.

09/2010 - 06/2014 **BSc** in Physics, Southwest Jiaotong University, China.

Awards

Grant

2023 PI, NGF AiNed XS Europa (80K EUR).
Intensity: the "Forgotten" Variable in LiDAR-based Perception.

Challenge

2024 Argoverse2 Scene Flow challenge.
1st place on the leaderboard (unsupervised).

Conference

10/2022 **Outstanding** reviewer, ECCV.
06/2022 **Outstanding** reviewer, CVPR.
07/2021 **Best student paper**, ICCV *workshop* on
Deep Learning for Geometric Computing.

Service

Reviewing

2020 - Now CVPR/ICCV/ECCV/BMVC.

Conference

2023 Local chair, Netherlands Conference on Computer Vision.

Workshop

2020 - 2022 Visual Inductive Priors for Data-Efficient Deep Learning.

Teaching

Courses

2019 - 2022 Seminar Computer Vision by Deep Learning (CS4245).

Supervision

PhD Ted de Vries Lentsch and Shiming Wang (ongoing).
Msc × 4 theses (×1 Cum Laude).

References

Dr. Holger Caesar	TUDelft, h.caesar@tudelft.nl@tudelft.nl.
Dr. Jan van Gemert	TUDelft, j.c.vangemert@tudelft.nl.
Dr. Silvia-Laura Pintea	Leiden University Medical Center, s.l.pintea@lumc.nl.

Interests

Power lifting, Auto and Autobahn enthusiast.

Publications

1. ICP Flow: Scene Flow Estimation with Iterative Closest Point.
   Y. Lin, and H. Caesar.
   Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
2. BaSAL: Size Balanced Warm Start Active Learning for LiDAR Semantic Segmentation.
   J. Wei, **Y. Lin*** and H. Caesar. (* Daily supervisor)
   International Conference on Robotics and Automation (ICRA), 2024.
3. A Step Towards Understanding Why Classification Helps Regression.
   S. Pintea, **Y. Lin**, J. Dijkstra, and J. van Gemert.
   International Conference on Computer Vision (ICCV), 2023.
4. NeRD++: Improved 3D-mirror symmetry learning from a single image.
   Y. Lin, S. Pintea, and J. C. van Gemert.
   British Machine Vision Conference (BMVC), 2022.
5. Deep vanishing point detection: Geometric priors make dataset variations vanish.
   Y. Lin, R. Wiersma, S. Pintea, K. Hildebrandt, E. Eisemann and J. C. van Gemert.
   Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
6. Investigating transformers in the decomposition of polygonal shapes as point collections.
   A. Alfieri, **Y. Lin***, and J. C. van Gemert. (* Daily supervisor)
   International Conference on Computer Vision Workshop (ICCVW), 2021.
   Best student paper.
7. Semi-supervised lane detection with deep Hough Transform.
   Y. Lin, S. Pintea, and J. C. van Gemert.
   International Conference on Image Processing (ICIP), 2021.
8. Deep Hough-Transform line priors.
   Y. Lin, S. Pintea, and J. C. van Gemert.
   European Conference on Computer Vision (ECCV), 2020.

June 14, 2024