

## Yancong Lin

<http://yanconglin.github.io/>

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### SUMMARY

A dedicated, creative, hands-on researcher on 3D computer vision.  
Interested in pre-wiring deep learning with generic visual inductive priors.

### EXPERIENCE

1/2022 - Now      Postdoc, Delft University of Technology, The Netherlands  
Working on pixel-free deep learning and vision for industrial inspection.

### EDUCATION

9/2017-4/2022      PhD, Delft University of Technology, The Netherlands  
Dissertation: [Data-efficient learning of geometric structures from single-view images](#)  
9/2014-6/2017      MEng in Computer Science, Tianjin Univ, China  
9/2010-6/2014      BSc in Physics, Southwest Jiaotong Univ, China

### RESEARCH

1/2022 - Now      **Vision for Industrial Inspection - aircraft engines**  
Transfer learning from synthetic data to the real-world;  
3D reconstruction from a single video using NeRFs.  
3/2021 - 9/2021      **3D reflection symmetry detection from single-view images**  
Incorporated 3D mirror geometry into CNNs;  
Reduced dependency on big data and achieved real-time inference.  
3/2020 - 3/2021      **Geometric priors for deep vanishing point detection**  
Implemented differentiable projections from image plane to Gaussian sphere;  
Proposed a learning-based detector robust to domain shift (synthetic - real);  
Gained experience in Graph-CNNs on point cloud data;  
9/2017 - 3/2020      **Deep Hough-Transform line priors**  
Proposed a stand-alone Hough Transform module for end2end learning;  
Enhanced the performance of CNNs in a small-data regime;  
Extended Hough Transform to semi-supervised lane detection.  
9/2015 - 1/2016      **Engineering: Multi-view 3D video capture system**  
Implemented real-time 3D display (16 cameras, 30 FPS, 1920 × 1080).

### KEY PUBLICATIONS

1. [Deep vanishing point detection: Geometric priors make dataset variations vanish](#). **Y. Lin**, R. Wiersma, S. Pinte, K. Hildebrandt, E. Eisemann and J. C. van Gemert. CVPR 2022.
2. [Deep Hough-Transform line priors](#). **Y. Lin**, S. Pinte, and J. C. van Gemert. ECCV 2020.
3. [Investigating transformers in the decomposition of polygonal shapes as point collections](#). A. Alfieri, **Y. Lin**, and J. C. van Gemert. ICCV-workshop 2021, Best Student Paper.
4. [Semi-supervised lane detection with deep Hough Transform](#). **Y. Lin**, S. Pinte, and J. C. van Gemert. ICIP 2021.
5. [Data-efficient learning for 3D mirror symmetry detection](#). **Y. Lin**, S. Pinte, and J. C. van Gemert. Technical report, 2021.

## ACADEMIC ACTIVITIES

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### Teaching Assistant

2019 - 2021 Seminar Computer Vision by Deep Learning (CS4245)

### Reviewing

2020 - Now CVPR/ICCV/ECCV, IEEE Transactions on Image Processing

### Workshops

2020 - Now [Visual Inductive Priors for Data-Efficient Deep Learning Workshop](#)

### Awards

2016 National Scholarship, Ministry of Education, China

### Supervision (Msc)

Chengming Feng Synthetic pretraining for object detection, ongoing

Andrea Alfieri On the decomposition of visual sets using Transformers, 2020

Kang Lang Vertex-voting-based polygonal object detection, 2019

## SKILLS

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Programming Python, C++, CUDA (implemented Conv2d from scratch in PyTorch)

Social Editor/journalist for school newspaper

## INTERESTS

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Fitness, Formula 1, Premier League, NBA

## REFERENCES

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[Prof. Jan van Gemert](#) Computer Vision Lab, TUDelft. [J.C.vanGemert@tudelft.nl](mailto:J.C.vanGemert@tudelft.nl)

[Dr. Silvia L. Pintea](#) Netherlands Cancer Institute. [Silvia.Laura.Pintea@gmail.com](mailto:Silvia.Laura.Pintea@gmail.com)

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