CHENG-YOU LU

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EDUCATION

University of Technology Sydney, Advisor: Chin-Teng Lin — New South Wales, Australia
Ph.D in Computer Science — Oct. 2023 — Mar 2027

Brown University, Advisor: Srinath Sridhar — Rhode Island, USA
M.S. in Computer Science | GPA: 4.0/4.0 — Aug 2021 — May 2023
- Relevant Coursework: Advanced Topics in Deep Learning, Deep Learning, Computer Vision, Intro to Computer Graphic

National Chiao Tung University (NCTU), Advisor: Wen-Hsiao Peng — Hsinchu, Taiwan
B.S. in Computer Science | GPA: 3.96/4.3 — Sept 2015 — June 2019
- Relevant Courses: Intro to Pattern Recognition, Intro to Machine Learning, Deep Learning & Practice

Shanghai Jiao Tong University (SJTU), Exchange Student — Shanghai, China
B.S. in Computer Science | GPA: A- — Sept 2017 — Jan 2018
- Relevant Courses: Cloud Computing, Thinking and Approach of Programming

PUBLICATIONS

[P1] C. Y. Lu, P. Zhou, A. Xing, C. P. C. Pokhariya1, A. Dey, I. N. Shah, R. Mavidipalli, D. Hu, A. I. Comport, K. Chen, S. Sridhar, "DiVa-360: The Dynamic Visual Dataset for Immersive Neural Fields," **IEEE CVPR Highlight**, June 2024

[P2] T. Houchens[1], C. Y. Lu[1], S. Duggal, R. Fu, S. Sridhar, "NeuralODF: Learning Omnidirectional Distance Fields for 3D Shape Representation," **Technical Report**, June 2022

[P3] S. Y. Pan[1], C. Y. Lu[1], S. P. Lee, and W. H. Peng, "Weakly-Supervised Image Semantic Segmentation Using Graph Convolutional Networks," **IEEE ICME**, July 2021

[P4] Y. C. Huang, Y. H. Chen, C. Y. Lu, H. P. Wang, W. H. Peng, and C. C. Huang, "Video Rescaling Networks with Joint Optimization Strategies for Downscaling and Upscaling," **IEEE CVPR**, June 2021

RESEARCH EXPERIENCE

Brown Interactive 3D Vision & Learning Lab — Rhode Island, USA
Research Assistant, Advisor Srinath Sridhar — June 2023 – June 2024

DiVa-360: The Dynamic Visual Dataset for Immersive Neural Fields ⧉
- Proposed DiVa-360, a real-world 360° dynamic visual dataset that contains synchronized high-resolution and long-duration multi-view video sequences of table-scale scenes captured using a customized low-cost system with 53 cameras.
- Evaluated and analyzed existing dynamic novel view synthesis methods on the proposed dataset and found that existing methods are biased toward motions.

NeuralODF: Learning Omnidirectional Distance Fields for 3D Shape Representation ⧉
- Proposed ODFs, a 3D shape representation that can be transformed to and from various 3D representations and approximated ODFs through neural network.

NCTU Multimedia Architecture and Processing Lab — Hsinchu, Taiwan
Research Assistant, Advisor: Wen-Hsiao Peng — Jan 2021 – Mar 2021

Weakly-Supervised Image Semantic Segmentation Using Graph Convolutional Networks ⧉
- Introduced a feature propagation framework built on Graph Neural Network to the affinity network.

Video Rescaling Networks with Joint Optimization Strategies for Downscaling and Upscaling ⧉
- Implemented joint optimization methods built on invertible neural networks and designed a center loss to mitigate the quality fluctuation in the reconstructed video.

University of Washington-NCTU Artificial Intelligence Lab — Hsinchu, Taiwan
Research Assistant, Advisor: Jenq-Neng Hwang, Wen-Hsiao Peng — Sept 2020 – Dec 2020

Wafer Defect Inspection
- Adopted an unsupervised domain adaptation method to classify wafers according to its defects.

WORK EXPERIENCE

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[1]indicates equal contribution

TuSimple   California, USA
Perception Research Engineer Intern, Camera Group   May 2022 – Aug 2022
Transformer model for semantic segmentation
- Applied Transformer with semi-supervised learning and contrastive learning and improved the performance of the motorcycle category by 20% mIoU.
- Augmented dataset through the pseudo labels from Transformers and improved the performance of the baseline by 3% mIoU.

SERVICES

- 2024 NeurIPS Reviewer
- 2024 IEEE CVPR Reviewer
- 2024 AAAI Reviewer
- 2024 IEEE Transactions on Artificial Intelligence Reviewer
- 2024 IEEE ICRA RoboNerF Workshop Reviewer

AWARDS & HONORS

- 2024 Taiwan government scholarship to study abroad
- 2018 Ministry of Science and Technology's College Student Research Program
- 2016 Certificate of Appreciation for Vice Teaching Assistant from Dean of Computer Science Department

LANGUAGE AND SKILLS

Programing Languages: Python, C, C++, MATLAB, SQL
Tools: IsaacLab, Webots, SB3, Tensorflow, Pytorch, Scikit-Learn, Keras, MMCV, MMSegmentation, Linux
Language: Mandarin (native), English (fluent)