

CHENG-YOU LU

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Personal Webpage | GitHub

EDUCATION

University of Technology Sydney, Advisor: Chin-Teng Lin

Ph.D in Computer Science

NSW, Australia
Oct 2023 — Mar 2027

Brown University, Advisor: Srinath Sridhar

M.S. in Computer Science | GPA: 4.0/4.0

Rhode Island, USA
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

B.S. in Computer Science | GPA: 3.96/4.3

Hsinchu, Taiwan
Sept 2015 — June 2019

- Relevant Courses: Intro to Pattern Recognition, Intro to Machine Learning, Deep Learning & Practice

Shanghai Jiao Tong University (SJTU), Exchange Student

B.S. in Computer Science | GPA: A-

Shanghai, China
Sept 2017 — Jan 2018

- Relevant Courses: Cloud Computing, Thinking and Approach of Programming

PUBLICATIONS

- [P1] Z. Zhuang, C. Y. Lu, Y. C. F. Chang, Y. K. Wang, T. Do, C. T. Lin, “AEGIS: Human Attention-based Explainable Guidance for Intelligent Vehicle Systems,” **ACM CHI**, May 2025
- [P2] A. Dey, C. Y. Lu, A. I. Comport, S. Sridhar, C. T. Lin, J. Martinet, “HFGaussian: Learning Generalizable Gaussian Human with Integrated Human Features,” **Technical Report**, Nov 2024
- [P3] 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
- [P4] T. Houchens¹, C. Y. Lu¹, S. Duggal, R. Fu, S. Sridhar, “NeuralODF: Learning Omnidirectional Distance Fields for 3D Shape Representation,” **Technical Report**, June 2022
- [P5] S. Y. Pan¹, C. Y. Lu¹, S. P. Lee, and W. H. Peng, “Weakly-Supervised Image Semantic Segmentation Using Graph Convolutional Networks,” **IEEE ICME**, July 2021
- [P6] 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

Computational Intelligence and Brain-Computer Interface Lab

PhD Candidate, Advisor Chin-Teng Lin, Co-Advisor Yu-Lun Liu, Thomas Do

NSW, Australia
Oct 2023 – Mar 2027

AEGIS: Human Attention-based Explainable Guidance for Intelligent Vehicle Systems

- Proposed AEGIS, a human attention-based explainable guidance for intelligent vehicle systems, which leverages a pretrained human attention model to identify critical regions of interest for decision-making.
- Proposed a human attention dataset, collecting 1.2 million frames from 20 participants across six scenarios.

HFGaussian: Learning Generalizable Gaussian Human with Integrated Human Features

- Proposed a generalizable 3D Gaussian Splatting that can estimate novel views and human features, including the 3D skeleton, 3D keypoints, and dense pose, from sparse input images in real time.

Brown Interactive 3D Vision & Learning Lab

Research Assistant, Advisor Srinath Sridhar

Rhode Island, USA
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.

¹indicates equal contribution

NCTU Multimedia Architecture and Processing Lab

Research Assistant, Advisor: Wen-Hsiao Peng

Hsinchu, Taiwan

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

Research Assistant, Advisor: Jenq-Neng Hwang, Wen-Hsiao Peng

Hsinchu, Taiwan

Sept 2020 – Dec 2020

Wafer Defect Inspection

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

WORK EXPERIENCE

TuSimple

Perception Research Engineer Intern, Camera Group

California, USA

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

- Reviewers of CVPR24,25, ICLR25, NeurIPS24, AAAI24, ICRA RoboNerF24, and Transactions on Artificial Intelligence

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

Programming Languages: Python, C, C++, MATLAB, SQL

Tools: IsaacLab, Webots, SB3, Tensorflow, Pytorch, Scikit-Learn, Keras, MMCV, MMSegmentation, Linux

Language: Mandarin (native), English (fluent)