

# Weijie Lyu

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## RESEARCH INTERESTS

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### Computer Vision and Machine Learning

- Current Focus: 3D Novel View Synthesis
- Previous Experience: Continual Learning, Autonomous Driving, Image Generation, Robotics, etc.

## EDUCATION

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**University of California, Merced**, Merced, CA Aug. 2023 — Present  
Doctor of Philosophy, Electrical Engineering and Computer Science GPA: 4.00

- Ph.D. Advisor: Prof. Ming-Hsuan Yang

**University of Illinois, Urbana-Champaign**, Urbana-Champaign, IL Aug. 2021 — May 2023  
Master of Science, Computer Science GPA: 3.91

- M.S. Advisor: Prof. Derek Hoiem
- Thesis: *MACON: Memory-Augmented Continual Learning for Open-world Classification*

**ShanghaiTech University**, Shanghai, China Sept. 2017 — July 2021  
Bachelor of Engineering, Computer Science and Technology GPA: 3.67

- Senior Thesis Advisor: Prof. Zhihao Jiang
- Thesis: *Intelligent Driving Verification Platform Based on Virtual Traffic Conditions*
- Award: Outstanding Graduate of Shanghai; Outstanding Graduate of ShanghaiTech University

**University of California, Berkeley**, Berkeley, CA Aug. 2019 — May 2020  
Visiting Student, Electrical Engineering and Computer Science GPA: 3.68

- Undergraduate Research Advisor: Prof. Sonia Bishop

## PUBLICATIONS

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**PTT: Point-Trajectory Transformer for Efficient Temporal 3D Object Detection** CVPR 2024  
Kuan-Chih Huang, **Weijie Lyu**, Ming-Hsuan Yang, Yi-Hsuan Tsai

**Consistent Multimodal Generation via A Unified GAN Framework** WACV 2024  
Zhen Zhu, Yijun Li, **Weijie Lyu**, Krishna Kumar Singh, Zhixin Shu, Sören Pirk, Derek Hoiem

**SafeBench: A Benchmarking Platform for Safety Evaluation of Autonomous Vehicles** NeurIPS 2022  
Chejian Xu\*, Wenhao Ding\*, **Weijie Lyu**, Zuxin Liu, Shuai Wang, Yihan He, Hanjiang Hu, Ding Zhao, Bo Li

**CircuitBot: Learning to survive with robotic circuit drawing** PLOS ONE  
Xianglong Tan, **Weijie Lyu**, Andre Rosendo

## PREPRINTS

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### **Gaga: Group Any Gaussians via 3D-aware Memory Bank**

**Weijie Lyu**, Xueting Li, Abhijit Kundu, Yi-Hsuan Tsai, Ming-Hsuan Yang

- Submitted to ECCV 2024

### **Continual Learning in Open-vocabulary Classification with Complementary Memory Systems**

Zhen Zhu\*, **Weijie Lyu\***, Yao Xiao, Derek Hoiem

- Submitted to ICML 2024

## ACADEMIC SERVICES

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### **Conference Reviewer**

NeurIPS 2022, ACCV 2024, ECCV 2024

## PROJECTS

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### **Face to Emoji**

UIUC, Spring 2022

*Project Link:* <https://github.com/weijielyu/face2emoji>

- CS 455 course project advised by Prof. Yuxiong Wang
- Develop a face-to-emoji converter based on emotion classification and face orientation detection to achieve precise alignment

### **Lane Boundaries Detection in Extreme Scenario**

UIUC, Fall 2021

*Project Link:* [https://github.com/weijielyu/CS588\\_Final\\_Project](https://github.com/weijielyu/CS588_Final_Project)

- CS 588 course project advised by Prof. David Forsyth
- Develop a lane-following algorithm that surpasses deep learning-based methods on sharply curved lanes by effectively using Canny edge-detection, Hough line detection, DBSCAN, etc.

### **Developmental Prosopagnosia and Autism-trait (DPA) Project**

UC Berkeley, Spring 2020

- Undergraduate researcher advised by Prof. Sonia Bishop
- Detect and visualize eye tracker data, distinguishing fixations, blinks, and saccades while examining facial features to identify behavioral distinctions between individuals with and without DPA

### **Robot Art: Using Robot Arm to Draw Pictures**

UC Berkeley, Fall 2019

*Project Link:* <https://sites.google.com/berkeley.edu/ee106a-roboart>

- EECS C106A course project advised by Prof. S. Shankar Sastry
- Design a PID control system that allows a robot to draw a portrait / write Chinese characters with Robot Operating System (ROS)

## TEACHING EXPERIENCE

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### **University of California, Merced**

Merced, CA

*Teaching Assistant*

- CSE 019 Introduction to Computing Spring 2024
- CSE 185 Introduction to Computer Vision Fall 2023

### **University of Illinois, Urbana-Champaign**

Urbana-Champaign, IL

*Teaching Assistant*

- CS 441 Applied Machine Learning
- CS 100 Computer Science Orientation

Spring 2023  
Fall 2022

**ShanghaiTech University**

*Teaching Assistant*

Shanghai, China

- CS 150 Database and Data Mining

Fall 2020