# Yunzhe Jonas Li

**University of California, Berkeley** 2024-2025
*M.ENG., Electrical Engineering and Computer Sciences in Robotics*

**Shanghai University** 2020-2024
*B.ENG., Computer Science, Rank: Top 1*

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## WORK EXPERIENCE

**Momenta** *2024*
Software Engineer Intern | Shanghai, China
- Delivered the first version of the **reversing feature** for **GM Cadillac Lyric** autopilot, covering the **full product lifecycle**
- Developed a clustering algorithm to detect stuck states in autonomous vehicles, boosting **recovery performance** by **3%** across 800+ real parking test cases in 30+ garages within 4 months
- Designed a checker to identify prolonged braking stops, achieving **98% accuracy** in detecting stuck states and reducing false positives by 15%, improving simulation reliability for 15,000+ events
- **Slashed** the product manager's **workload** by **87.5%** through automating the advanced data processing for 36,000+ daily simulation test records across 6 parking scenarios

## TECHNICAL LEADERSHIP

**DJI RoboMaster Competition**

*Team Lead* *2022 - 2024*
- Led a 40-student team to **deliver** 8 fully functional robots **from scratch**, winning the **3rd place** in RoboMaster 2023
- Gained **US$20,000** in sponsorship by improving shooting, motion control, and detection through **7000+ test iterations**

*Co-Head of Robot Computer Vision* 2020 - 2022
- Deflected a **real-time** detection system for mobile robots, gaining **promotion** for code contributions and troubleshooting
- Enhanced detection accuracy by **25%** by upgrading from pure OpenCV detection to an OpenCV + **YOLOv7** hybrid system
- Refactored the system from **Python to C++** with 5 peers, achieving **60 fps** on NVIDIA NX and **80 fps** on NVIDIA AGX
- Initiated a movement prediction algorithm processing detected key points, outperforming **90%** competitors in metrics

**MealMate: From Cravings to Carts** *2024*
*Team Lead*
- Designed an **LLM-powered assistant** to generate tailored shopping lists using user preferences and real-time inventory
- Benchmarked GPT-4o-mini against GPT-4 and GPT-3.5-turbo for LLM agent performance, demonstrating 20% higher recipe match precision and 40% suggestion accuracy, and 42% faster processing time
- Built a showcase using **React.js** for the frontend and **Flask** for the backend with effective prompts and transaction logic

**FIRST Tech Challenge** *2017 - 2020*
*Team Lead*
- Bent the performance of a 15-member team, leading to **2 FIRST World Championships admissions**(top 2 % out of 7500 teams globally), **1 Inspire Award**(1st out of 40 teams), and **3 Connect Awards**(top 8% out of 60 teams)
- Developed an autonomous system using multiple sensors and **OpenCV/TensorFlow SDK**, achieving **95%+** detection accuracy and securing the **highest** Regional score with rule-based human driver imitating strategies

## RESEARCH

**Visual Explainer For Deep Learning Decisions** *2023 – 2024*
- Designed a 2-stage **semantic segmentation** and an **AutoEncoder** with tree constraints, using Shapley Value to extract and rank concepts by importance, boosting consistency score by 35% on 1000+ images from 20 **ImageNet** classes
- Developed a **Django backend APIs** for page navigation, handling **GET** and **POST** requests, and efficient data retrieval
- Built a **Vue.js frontend** with features such as user login, image segmentation, and contribution heatmap visualization

**Mining Property Relations of NASICON Solid Electrolyte** *2021 - 2023*
- Improved a Named Entity Recognition (NER) model by labeling 7,000+ high-quality sentences, boosting precision by 5%, recall by 3%, and F-1 score by 4%
- Developed a BERT-based data **processing pipeline** to extract 106,896 entities and 260,475 entity-relation triples from 1,808 literature sources, storing result in Neo4j and MySQL