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

linkedin.com/in/yunzhe-l-991638151/
github.com/LIYunzhe1408
liyunzhe.jonas@berkeley.edu
5102777856

WORK EXPERIENCE

Momenta Software Engineer Intern | Shanghai, China *2024*

- Delivered the first version of reversing feature in parking lots for **GM Cadillac Lyric** during a complete product life cycle
- 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 detect prolonged braking stops, achieving 98% accuracy in identifying stuck states and reducing false positives by 15%, enhancing simulation reliability across 15,000+ events
- Slashed the product manager's workload by 87.5% through automating the advanced data processing of 36,000+ simulation test records per day across 6 parking scenarios

TECHNICAL LEADERSHIP

DJI RoboMaster Competition | **Git repo** | **Video**

Team Lead *2022 - 2024*

- Managed a 40-student team to build 8 types of robots from scratch for 2 years, winning the **3rd place** in RoboMaster 2023
- Gained **US$20,000** in sponsorship by increasing success rate in shooting, movement, and detection through **7000+ tests**

Co-Head of Robot Computer Vision 2020 - 2022

- Deflected a **real-time** detection system for mobile robots, getting promotion by coding contribution and trouble shooting
- Converted complete OpenCV-based object detection into OpenCV pre-processing+YOLOv7, increasing accuracy by 25%
- Refactored the system in collaboration with 5 peers from **Python to C++**, achieving 60 and 80 fps on NVIDIA NX and AGX
- Initiated a movement prediction algorithm that processes object detection key points, improving efficiency by 50%

MealMate: From Cravings to Carts | **Git repo** | **Video** *2024*

Team Lead

- Designed **a LLM assistant** that delivers tailored shopping lists based on user preferences and real-time store 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% reduced processing time
- Developed the UI/UX in React.js frontend, and effective prompts and transaction logic in a Flask backend for showcase

FIRST Tech Challenge | **Team Documentary** *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** for controlling and 95%+ accuracy detection, achieving **highest** score in the **Regional** with rule-based human driver imitating strategies

RESEARCH

Visual Explainer For Deep Learning Decisions | **Demo Video** *2023 – 2024*

- Designed a 2-stage **semantic segmentation** and an **AutoEncoder** with tree constraints to extract and rank concepts by importance using Shapley Value, 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** showing features such as user login, image segmentation, and contribution heatmap visualization

Mining Property Relations of NASICON Solid Electrolyte *2021 - 2023*

- Labeled 7,000+ high-quality NASICON literature sentences, improving **Named Entity Recognition** (NER) model performance by 5% in precision, **3%** in recall, and 4% in F-1 score
- Developed a **BERT-based data processing pipeline** to extract 106,896 material entities and 260,475 entity-relation triples from 1,808 NASICON-related literature sources, with efficient storage in **Neo4j** and **MySQL** as **backend database**
- Built a **Vue.js** platform with **Element UI**, **routing**, and **state management**, allowing materials scientists to identify target texts in literature and convert them into a **knowledge graph** to explore relationships between material properties