





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: 1/31, GPA: 3.78

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WORK EXPERIENCE

Momenta Software Engineer Intern | Shanghai, ChinaFeb 2024 – June 2024

Python/Algorithm Development/Data Processing/Clustering/Git

- Developed a **clustering algorithm** to detect stuck states in autonomous vehicles, boosting recovery performance of GM Cadillac Lyric by **3%** across **800+ real** parking test cases in **30+** garages within **4 months**
- Engineered a robust 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**
- Partnered closely with the product manager and designed a **Python class library** to automatically process **36,000+** simulation reports across **6** parking scenarios, improving analysis efficiency by **87.5%**

TECHNICAL LEADERSHIP

Cal Hackthon 11.0 | A LLM-Powered Drive-Thru Solution | Team LeaderSept 2024 - Nov 2024

Deepgram/AutoGen/Flask/Vue.js/Fine-tuning

- Designed a **sequential chat** system with 3 LLM agents using **AutoGen** to analyze user requirements and generate ordered items, achieving **0.9551** cosine similarity, **0.2712** ROUGE-L, and **0.8811** BERT F1 score.
- Developed data processing functions and effective prompts for LLM agents, and integrated **Deepgram API** in a **Flask** backend to convert speech to text for **real-time** drive-thru interaction, achieving **85%** successful transactions

DJI RoboMaster Competition (4 Years) | Team Leader & Computer Vision EngineerSept 2020 - June 2024

C++/OpenCV/YOLOv7/Real-time system/Linux/Least squares | [Git repo](#) | [Video](#)

- Led a **40-student** team to build **8 types** of robots from scratch to product, winning the **3rd place in RoboMaster 2023**
- Developed a **real-time auto-aim system** with monocular camera input for **mobile robots** on NVIDIA NX, achieving **60 fps** with over **90%** accuracy in **C++/Linux** using **OpenCV** and **YOLOv7** for object detection
- Implemented a **trajectory prediction** algorithm using a **least squares** algorithm, improving system efficiency by **50%**

FIRST Tech Challenge (3 Years) | Team Leader, 14263/16107 F.G.(Facing The Giants)Sept 2017 - Jan 2020

TensorFlow/OpenCV/Leadership/Motor control/Rule-based strategy | [Team Documentary](#)

- Developed an autonomous system using motor encoders, color sensors, and **OpenCV/TensorFlow SDK** for control and **95%+** accurate detection, achieving **highest** score in the Regional with **rule-based** human driver imitating strategies
- Led the team to achieve 2 admissions into FIRST World Championships in 2018&2019(**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)

RESEARCH

Visual Explainer For Deep Learning Decisions | Research AssistantSept 2023 – May 2024

Full stack/Python/PyTorch/AutoEncoder/Semantic Segmentation/Django/Vue.js | [Demo Video](#)

- 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 | Research AssistantSept 2021 - May 2023

Full stack/Python/Java/Vue.js/SpringBoot/Py2Neo/Neo4j/BERT/Element UI

- 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

SKILLS & AFFINITIES

Programming & Framework: Python, C++, PyTorch, ROS, SQL, Linux, Vue.js, Django
Library & Tools: OpenCV, AutoGen, Deepgram, Py2Neo, Timor-Python, Transformers, Git, Neo4j, AWS, Galileo AI, Figma
Affinities: **DJI Event Tech Support Lead** (Apr 2024) | **FIRST Lead Robot Inspector** (Jan 2024), **Robot Inspector** (Mar 2021)