Yi-Chun (Jim) Lo

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EDUCATION

University of California, Los Angeles Dec. 2024 (Expected)
- *Master of Science in Computer Science* Los Angeles, CA
- Coursework: Distributed and Parallel Computing, Data Management Systems, Compiler

National Taiwan University (NTU) June 2022
- *Bachelor of Science in Computer Science and Information Engineering.* Taipei, Taiwan
- Coursework: Algorithms, Data Structures, Computer Networks, Operating System, Computer Vision

SKILLS

Language & Library: C, C++, Python, Java, SQL, CUDA C, OpenMP, MPI, FPGA
Network & Web: JavaScript, NodeJS, MongoDB, Postgres DB, Neo4j, Spark, Redis, Socket Programming
Develop Tools: Git, Docker, Virtual Machine, AWS, GCP
System: Linux, Shell Script, System Programming, Robotic Operating System (ROS)

EXPERIENCE

Software Engineer Intern | *Mediapipe* Jun. 2024 - Present
Graphen New York

- Enhanced the robustness and performance of face-recognition systems by analyzing source code APIs and developing effective algorithms.

Data Engineer Intern | *C++, OpenCV, Yolo, numpy, ROS, shell script* Dec. 2021 - Apr. 2023
Graphen Taipei

- Addressed fisheye camera distortion by developing ROS packages with OpenCV, leveraging the fisheye camera's broader view to resolve the challenging issue in the team.
- Developed and traced C++ tools to extract the robot pose from streaming data, a critical progress for auto-docking algorithm.
- Fine-tuned YoloV4 models to achieve **92% mAP** in license plate detection, and set up pipeline to OCR with tesseract and EasyOCR.

MobileInsight - Cloud Version | *C++, Python API, open-source* Apr. 2024 - Jun. 2024
UCLA WING Lab Los Angeles

- Analyzed tens of thousands of lines of C++ and Python open-source code to identify and isolate the core functionality of the target feature.
- **Implemented a critical packet timestamp filtering feature** by integrating a timestamp interval into the packet state manager, ensuring accurate timestamp retrieval through binary buffer reading and conversion to UNIX format.
- **Leveraged default arguments in Python to maintain compatibility with the original API** while seamlessly integrating new features, minimizing changes to previous API implementations.

PROJECTS

Distributed and Parallel Computing | *MPI, CUDA C, OpenMP, FPGA, AWS* Sep. 2023 - Dec. 2023

- Applied OpenMP for parallelization in matrix multiplication; designed loop tiling and permutation strategies to optimize cache utilization, resulting in an **8-fold speed increase**.
- Utilized MPI APIs for inter-process communication, effectively parallelizing matrix multiplication by segmenting the computation into sub-processes, achieving a **7-fold increase in speed**.
- Leveraged CUDA C to design implicit loops, block sizes, and grid dimensions, parallelizing the CNN convolution process and achieving a **14-fold speed enhancement**.
- Designed pipeline and parallelization strategy on FPGA, achieving a **15-fold speed enhancement** in CNN computation.

BizPro Official Website | *JavaScript, Node.js, MongoDB* Sep. 2022 - Feb. 2023

- Crawled the membership data with PyMongo and efficiently resolved data format inconsistency by leveraging SQL and Python skills.
- Developed the back-end system with Node.js and MongoDB; crafted efficient APIs for search, filter, and database management functionalities.
- Developed an intuitive UI for the back-end system, empowering non-coders to efficiently manage and maintain the system, enhancing user experience and operational efficiency.