Jingbin (Justin) Lin

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EDUCATION

University of California - San Diego Sept. 2025 – present
Master of Science in Computer Engineering California

McMaster University Sept. 2020 – June 2025
Bachelor of Engineering in Electrical Engineering and Management Canada

SKILLS

Languages : Verilog, C++, Python, TypeScript

Tools : Synopsys Design Compiler, Cadence Innovus, Virtuoso/AMS, ModelSim, Quartus Prime, Altium Designer, GitHub, Jira, Pytorch
Devices : Raspberry Pi, NVIDIA Jetson, Oscilliscope, Microscope, Soldering Station

AWARDS

- Dean's Honour List (2025, 2023, 2021)
- McMaster Honour Award (2020)
- Dr. Rudolf De Buda Scholarship (2025)

PROJECTS

2-D Systolic Array Design with Convolution Layer Implementation

- Design **2D Systolic Array** to compute convolution in both output stationary and weight stationary mode.
- Simulation test on FPGA **Cyclone IV GX** with performance metric: power consumption, through put, operation frequency, etc.
- Improve design by **multi-array** cooperation and power saving **gating control**.
- Trained **VGGNet** on **PyTorch** based on CIFAR10 Dataset, modify layer size and prune using C2F method to save compute power.

Raspberry Pi Cluster

- Engineered a **4-node** computing cluster using Raspberry Pi 5 and zero2 models for distributed tasks.
- Implemented **SLURM** workload manager and **OpenMPI** in both **Python** and **C++** to execute parallel processing jobs across nodes.
- Hosting service for personal profile website deployment and distributed computing tasks.

Autonomous Electric Vehicle Simulation

- Constructed AEV using **Nvidia Jetson Nano** while applying **ROS2 system**, **Depth Camera**, **LiDAR and IMU sensor**
- Solved mapping and route planning issues by employing **SLAM**, **Quadratic Propagation** and **odometry transformation algorithm**
- Successfully ran vehicle through multiple scenarios with **60fps** SLAM

Wearable Cave Mapping System

- Designed an affordable, wearable 3D scanning device for cave scanning.
- Lead a team of 5, integrated multiple devices like **IMU**, **LiDAR**, **Depth Camera** for localization, position tracking and mapping
- Achieved **3 hour** work time with **15fps** mapping update

WORK EXPERIENCE

MediumAI Jan. 2023 - Present
Co-Founder&Software Engineer (@MediumAI) Canada

- Developed backend **RAG LLM pipeline** to transcribe conversation audio and provide multilingual medical documentation based on professional medical database and data input
- Upgraded pipeline for capable of accepting multi-modal input, pre-process by filtering privacy sensitive information
- **Perform R&D team management** and work planning via **GitHub** and **Jira** Platform
- Developed UI and new product features with **Hero UI** and **Tailwind**
- **Highlights**: The Product of MediumAI, The post on first success, New Voice Agent Project

Sun Yat-sen University May - August 2023
Computer Science RA Intern China

- Contributed to development of neural network for physic simulation
- Researched and tested MLP neural networks by **NVIDIA Modulus** as differential equation solver
- Used **Open3D and Paraview** to conduct post-processing on dataset and visualize computing result
- Developed dataset conversion algorithm based on 3D scanning and STL files