Kai-Yin Hung

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WORK EXPERIENCE

Software Engineer   Jul 2024 – Present (1.5 yrs)
Upbeat Technology | Series B Startup – Wearable SoC & Vibration Sensor MEMS   *Full-Time/Greater Taipei*
- **Neural Network Deployment:** Led end-to-end deployment of neural networks to edge chips, including quantization (QAT/PQT), compiler optimization with kernel fusion and attention acceleration, fixed-point computation, KV-Cache optimization, and layout transformation. Successfully demonstrated low-cost LLM/VoiceAI solutions on BareMetal/LiteRT at CES and defense exhibitions.
- **Performance Optimization:** Achieved 48% latency reduction versus CMSIS-NN on MLPerf Tiny through NPU kernel fusion, optimized memory access patterns, and multi-region scheduling for efficient data reuse.
- **Low-Power Audio AI:** Developed bare-metal applications (speaker ID, keyword spotting, VAD, acoustic pickup) demonstrated at CES 2025 and RISC-V Summit, enabling multi-year battery life through clock-gating and power-mode optimization.

Software Engineer Intern   Jan 2022 – Dec 2023 (2 yrs)
InQuartik Corporation | Patent-Intelligence SaaS (IP analytics)   *Internship/Remote*
- Developed full-stack features across six SaaS applications (Vue2 + SpringMVC), emphasizing modular architecture, CI/CD automation, and AI-based data enrichment for patent analytics.
- Automated HubSpot–Apollo CRM synchronization via Python API scripting, cutting manual marketing operations by 60%.

Software Engineer Intern   Sept 2021 – Oct 2022 (1.1 yrs)
Industrial Technology Research Institute (ITRI) | L4/L5 Autonomous Driving Solution Provider   *Internship/Hsinchu*
- **Motion Forecasting:** Designed and trained deep-learning models in PyTorch for multi-agent trajectory prediction, validated on real-vehicle datasets collected in Taiwan.
- **MLOps:** Automated 3D point-cloud preprocessing and annotation pipelines, improving training throughput and adaptation to Taiwan's traffic behaviors.

Software Engineer Intern   Jul 2021 – Sept 2021 (2 mths)
GallopWave Inc. | Autonomous Driving Localization & Mapping Startup   *Internship/Greater Taipei*
- Implemented automated testing and visualization in C++ for embedded Visual-Inertial Odometry systems, benchmarking localization across IMU–Camera–GPS configurations.

PROJECTS

Motion Prediction on Waymo Open Motion Dataset | PyTorch   Oct 2020 – Nov 2020
- Ranked 8th on the official Waymo leaderboard for multi-agent trajectory prediction.

GBWT-Parallel | C++17, CUDA   Nov 2022 – Jan 2023
- Developed a parallelization framework for GBWT graph construction, improving runtime by 1.6× using multi-threading and CUDA optimizations.

House168 & DouDou.Jobs | Nuxt.js, Next.js, Full-Stack   2024 – Present
- Built Nuxt.js and Next.js platforms serving 4,000+ users, demonstrating live system design and production deployment. (House168, DouDou.Jobs)

PUBLICATIONS

Kai-Yin Hung, Chieh-Chih Wang, Wen-Chieh Lin, "Multi-modal Motion Prediction using Temporal Ensembling with Learning-based Aggregation," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024, Abu Dhabi).*

Kai-Yin Hung, Chung-Yun Hsieh, Chieh-Chih Wang, Wen-Chieh Lin, "EAMP: Entity-based Attention for Motion Prediction using HD Maps with Dynamic Field of View Leveraging," *IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP 2023, Kinmen).*

EDUCATION

National Yang Ming Chiao Tung University   Graduating Class of 2024
Master of Engineering in Electrical and Computer Engineering   *GPA: 4.15/4.3*

National Yang Ming Chiao Tung University   Graduating Class of 2022
Bachelor of Engineering in Electrical and Computer Engineering   *GPA: 4.00/4.3*

RELEVANT COURSEWORK

Machine Learning, DSP, Digital Image Processing, Vehicular Vision Systems, Parallel Programming (TA:Statistical Techniques & Deep Learning in Robotics)