Hungyuan (Johnson) Tseng

+886 965-580-808 | jhytseng@media.mit.edu | linkedin.com/in/hungyuan | github.com/johnsonafool

Education

National Taipei University of Technology — Taipei, TW
B.S. in Computer Science, Mediatek IC Design Program, Mobile Intelligent Network Lab — *Sep. 2020 – Present*

Massachusetts Institute of Technology — Cambridge, MA
Visiting Student in Media Arts and Sciences — *June 2024 – Sep. 2024*

Experience

Advantech Corporation Limited — May 2024 – Present
Software Engineer Intern — *Taipei, TW (Hybrid)*

- Developed DataInsight, a scalable data integration and analysis platform, enabling integration of heterogeneous data sources and efficient ETL operations through a graphical interface
- Engineered the development of Botender, a Backend-as-a-Service solution that integrates various Instant Messaging Platforms, deploying to Kubernetes clusters using Helm
- Managed Kubernetes clusters across data centers, utilizing Grafana, Prometheus, and InfluxDB for efficient monitoring, data visualization, and database management
- Architected GitOps CI/CD pipeline, reducing monthly build and test time by 10+ hours using GitHub Actions to automate deployment processes and push Docker images to a self-hosted Harbor registry

MIT Media Lab — June 2024 – Sep. 2024
Research Assistant — *Cambridge, MA*

- Designed a mutimodal routing framework, considered traffic conditions with individual preferences
- Achieving a 300%+ increase in processing speed by leveraging GPU acceleration, through the transformation of an existing Python algorithm into CUDA C
- Collaborated with a team of research scientists to design a city plan for rebuilding Kharkiv

MIT City Science Lab Taipei — Mar. 2022 – May 2024
Undergraduate Researcher — *Taipei, TW*

- Developed a platform to manage spatiotemporal data using HBase, built an end-to-end pipeline, implemented data search using H3 for spatial indexing
- Designed agent based modeling system simulated 100K+ citizens mobility behavior with LLM synthetic data
- Implemented QLoRA on LLMs, boosted task classification accuracy from 60% to 90%+ integrating with Retrieval-Augmented Generation (RAG) and Chain of Thought strategies (CoT) to access database context

Leadership

School Programming Club — June 2022 – June 2023
President — *Taipei, TW*

- Led a team of 5 committee members and organized 20+ events, including collaboration with GDSC (Google Developer Student Club) to promote programming among campus
- Increased course attendance rate by 50% and recruiting 70+ new members, achieved through a project-based learning approach that encouraged progressive learning in programming
- Handled public relations with the Office of Student Affairs and Computer & Network Center, discussed development of TAT, a cross-platform application designed for teachers and students to streamline access campus information
- Oversaw the maintenance and upgrade of the club's official website, transitioning from Vue CLI to Vite for enhanced performance and user experience

OpenHCI Workshop — Mar. 2022 – Aug. 2022
Facilitator — *Taipei, TW*

- Directed a group that granted Best Technical Award by developing an interactive recycling gaming platform to enhance user engagement and recycling habits
- Orchestrated application of Design Thinking principles to survey campus recycling behaviors, collecting 50+ valid questionnaires and conducting 15+ interviews utilized for both quantitative and qualitative analysis in user study
- Instructed the development of an interactive recycling platform, enhancing user engagement and recycling habits through Unity. This platform integrates custom sensor firmware developed with microcontrollers