Chieh-Chi Yang

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Education

National Taiwan University *Sept 2020 – Dec 2024*
BS in Electrical Engineering

- **GPA:** 3.72/4.3; **last60 GPA:** 3.97/4.3
- **Coursework:** Embedded System Lab (A+), Computer Network, Operating System, Algorithms, Data Structure
- **Research interests:** Distributed Learning, Distributed System, Cloud Computing

Research Experience

Undergraduate research *Sept 2024 – PRESENT*
Future Generation Communication and Networking Lab, Prof. Ai-Chun Pang

- Conducted research in federated learning (FL) and edge computing, tackling the critical challenge of system heterogeneity in hybrid edge environments.
- Optimized system efficiency by proposed an innovative model compression algorithm that aggregates the similar parts in classification models, achieving over a 60 times reduction in overhead.
- Authored a research paper currently in preparation for submission to IEEE Transactions on Mobile Computing (TMC).

Undergraduate research *Jan 2023 – June 2024*
Speech Processing and Machine Learning Lab, Prof. Hung-yi Lee

- Completed an one-semester lab training focused on cutting-edge NLP techniques, including Huggingface APIs usage and fine-tuning large language models (LLMs).
- Evaluated three distinct prompt designs (chain-of-thought, auto-prompt and APE) for a prompt benchmark, demonstrating their impact on Llama-2 models performance.
- Proposed innovative datasets for the Dynamic-Superb framework with the research submitted to ICLR 2025. GitHub

Publications

Dynamic-SUPERB Phase-2: A Collaboratively Expanding Benchmark for Measuring the Capabilities of Spoken Language Models with 180 Tasks *Mar 2024*
Co-author, ICLR 2025 under review
arXiv:2411.05361

Work Experience

IBM T.J. Watson Research Center *Yorktown Heights, NY*
Hybrid Cloud Research Intern *June 2024 – Sept 2024*

- Led a three-month project to design and implement a Kubernetes-based framework for automated accelerator health checks, significantly enhancing the reliability of ML training clusters.
- Enabled the framework to adapt seamlessly to various hardware devices, reducing code rewrite efforts by 85%, cutting labor costs and improving efficiency.
- Acquired extensive knowledge of large-scale cluster architectures and scalable system reliability, contributing to the optimization of cloud-based ML infrastructures.

CMoney Technology Cooperation *New Taipei City, Taipei*
Software Engineer Intern *July 2023 – May 2024*

- Enhanced system stability for 3.5 million monthly active users by migrating services to external servers

and refactoring over 50% of legacy backend code.

- Designed and maintained APIs, managing over 20 services using C#, MySQL, and MongoDB to optimize functionality.
- Leveraged modern deployment technologies like Kubernetes and resolved critical CI/CD pipeline bugs, improving deployment efficiency.

Projects

Gesture-Controlled Video Streaming Master *github.com*

Embedded System Lab Final Project

- Developed a remote control media streaming service using embedded systems, incorporating multi-threading and socket communication for efficient data handling.
- Designed a finite state machine to manage system flow and implemented a message queue that reduced message loss by 80%.
- Tools Used: C++, Python, RPi

Stock Calendar - Financial Website *github.com*

Web Programming Final Project

- Designed 90% of the UI and frontend for a financial website, enhancing user experience and interface.
- Developed backend APIs using Node.js and MongoDB, ensuring smooth data exchange between frontend and backend systems.
- Tools Used: React, Node.js, MongoDB

Extracurriculars

Open Source Community Volunteer *Nov 2022 – Feb 2023*

- Volunteered for 4 months with g0v, an open-source organization in Taiwan, contributing to social impact initiatives.
- Assisted in organizing two community events with 200 attendees and actively participated in core team meetings, providing input on strategic discussions and planning.
- Collaborated with engineers and lawyers from the community, strengthening my communication skills and broadening my perspective.

Yu-Lin Fellowship Program *Sept 2022 – June 2023*

- Participated in 6 design-thinking workshops and 3 sharing sessions focused on innovative problem-solving and user-centered design over the course of a year.
- Proposed a long-term care solution to improve media literacy for the elderly.
- Strived to understand diverse social issues and foster inclusivity across different social groups.

Awards

Service Learning Award Recipient *June 2023*

- Awarded the prestigious Service Learning Award, granted to only 5% of students for exemplary contributions to community service and leadership within the department.
- Organized departmental events with over 1,000 attendees, demonstrating leadership and event communication skills.

Skills

Programming Languages: C++, C, C#, Python, SQL, JavaScript

Technologies: Linux, .NET, Kubernetes, Docker, React

Languages: Mandarin (Native), English (TOEFL 102)