Chanyoung Jung

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Research Interest

On-device AI

My research interest lies in on-device machine learning, especially in the **heterogeneous mobile processor computing** and **mobile systems for 3D vision tasks** such as 3D object detection. I am passionate about utilizing resources of resource-constrained devices like mobile phones or edge devices more efficiently and creatively to run complex but practical tasks like 3D vision tasks. I have experiences in efficiently utilizing mobile processors for inferencing vision foundation models and 3D object detection models on edge devices.

Education

Yonsei University, Seoul, Republic of Korea *Mar 2024 – Present*
M.S Candidate in Computer Science
Mobile Embedded Systems Lab., Advised by Prof. Hojung Cha

Yonsei University, Seoul, Republic of Korea *Mar 2018 – Feb 2024*
B.S in Computer Science, GPA: 4.24/4.50 *Rank:5/67*

- Graduated as Cum Laude

Experience

Undergraduate Research Assistant *Dec 2022 – Dec 2023*
Mobile Embedded System Lab, Advised by Prof. Hojung Cha

- Designed a naive end-to-end system of a real-time 3D Object Detection system on the Jetson device. (Dec 2022 - May 2023)
  - Achieved 57% performance, 17 FPS, compared to the final goal, 30 FPS.
- Optimized the previous system with CUDA and several modules in the proposed system. (Aug 2023 - Dec 2023)
  - Improved the previous system as 25 FPS compared to the final target of 30 FPS.
- These two projects were further integrated and extended into the full MobiCom 2024 paper.

Publications (*Co-first authors)

ARIA: Optimizing Vision Foundation Model Inference on Heterogeneous Mobile Processors for Augmented Reality
Chanyoung Jung*, Jeho Lee*, Gunjoong Kim, Jiwon Kim, Seonghoon Park, and Hojung Cha
The 23rd ACM Annual International Conference on Mobile Systems, Applications, and Services (MobiSys '25) June 23-27, 2025. Anaheim, California, USA.

Panopticus: Omnidirectional 3D Object Detection on Resource-constrained Edge Devices
Jeho Lee, **Chanyoung Jung**, Jiwon Kim, and Hojung Cha
The 30th ACM Annual International Conference on Mobile Computing and Networking (MobiCom '24) November 18-22, 2024. Washington, D.C., USA.

Projects

Development of On-device DNN Inference System with Real-Time Aware Elastic Resource Allocation *Jul 2024 - Present*
National Research Foundation of Korea (NRF), Republic of Korea

Development of On-device DNN Inference System for Real-time 3D Perception with Mobile 360-degree Camera *May 2024 - Present*
National Research Foundation of Korea (NRF), Republic of Korea

Awards and Honors

Academic Prize – Graduated with High Honors, Yonsei University *Feb 2024*
Grand Prize – Software Capstone Design, Yonsei University *Jun 2023*
Academic Prize – Honors, Yonsei University *Feb 2023*
Academic Prize – Honors, Yonsei University *Aug 2019*
Academic Prize – High Honors, Yonsei University *Feb 2019*
Academic Prize – Highest Honors, Yonsei University *Aug 2018*

Skills

Programming: Python, C/C++, Java
Languages: Korean (Native), English (Intermediate), Japanese (Beginner)
Frameworks: QNN, TensorFlow Lite, Android, PyTorch, TensorRT

Teaching Experience

Operating System (CAS3101) *Spring 2025*
Teaching Assistant – Yonsei University, Seoul, Republic of Korea

System Programming (CAS3107) *Fall 2024*
Teaching Assistant – Yonsei University, Seoul, Republic of Korea