Juneseo Chang

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Education

Seoul National University (SNU) — Seoul, Republic of Korea
B.S. in Computer Science and Engineering — 2021.03 - 2026.08 *(expected)*

- GPA: 4.16/4.30
- Including 18 months of mandatory military service.

Publications

1. **Juneseo Chang**, Wanju Doh, Yaebin Moon, Eojin Lee, and Jung Ho Ahn, "IDT: Intelligent Data Placement for Multi-tiered Main Memory with Reinforcement Learning", *International Symposium on High-Performance Parallel and Distributed Computing (**HPDC**)*, 2024

2. **Juneseo Chang** and Daejin Park, "Work-in-Progress: Searching Optimal Compiler Optimization Passes Sequence for Reducing Runtime Memory Profile using Ensemble Reinforcement Learning", *International Conference on Embedded Software (EMSOFT)*, 2023

3. **Juneseo Chang**, Sejong Oh, and Daejin Park, "Work-in-Progress: Accuracy-Area Efficient Online Fault Detection for Robust Neural Network Software-Embedded Microcontrollers", *International Conference on Embedded Software (EMSOFT)*, 2022

4. **Juneseo Chang**, Myeongjin Kang, and Daejin Park, "Low-Power On-Chip Implementation of Enhanced SVM Algorithm for Sensors Fusion-Based Activity Classification in Lightweighted Edge Devices", *Electronics*, 2022

Research Experience

Scalable Computer Architecture Lab, SNU — 2023.01 - 2024.06

- Advisor: Jung Ho Ahn
- Proposed reinforcement learning-based OS-level multi-tiered memory management solution.
- Accepted to **HPDC 2024** (Acceptance rate: 17%).

AI-SoC Lab, Kyungbook National University — 2019.03 - 2022.10

- Advisor: Daejin Park
- Proposed ensemble reinforcement learning model for LLVM transform passes sequence optimization for runtime memory profile reduction (EMSOFT 2023 WiP).
- Proposed data-analysis-based online soft errors and control flow errors detection model for deep learning application (EMSOFT 2022 WiP).

Scholarships and Awards

Semiconductor Specialized University Scholarship, SNU — 2024.03 - 2026.08
$8,000 over three semesters.

Presidential Science Scholarship, Korea Student Aid Foundation — 2021.03 - 2026.08
Full tuition and stipend for eight semesters, total $34,000.

Hansung Scholarship, Hansung Son Jae Han Foundation — 2019.03 - 2021.02
$8,000 over two years.

Alumni Association Award, Daegu Science High School — 2021.02
Graduated with highest honors.

Relevant Coursework

Hardware System Design, Scalable High Performance Computing, Mobile Computing and Applications, Mathematical Foundations of Deep Neural Networks, Advanced Computer Architecture (Graduate), Advanced Compilers (Graduate), Computer Architecture, Compilers, Operating Systems, System Programming, Data Communications

Academic Projects

Linux/Android Porting on ARM Cortex-A53 SoC Spring 2024

Project for SNU M1522.000300 (Creative Integrated Design 2)

Ported mainline `U-Boot` bootloader, `Linux` kernel, and `Android AOSP` on custom ARM Cortex-A53 SoC. Supported custom peripherals and display panels by configuring device tree source files and kernel modules. Implemented `Mobilenet v1` with `GStreamer` and `NNStreamer`.

CNN Accelerator Spring 2024

Project for SNU 4190.309A (Hardware System Design)

Implemented convolution module and compiler for a CNN accelerator using `Amaranth`. Optimized performance using zero-skipping 2D systolic array, quantization, and pruning for the convolution module.

WalkGuard: Protecting Child Pedestrian from Distraction Fall 2023

Project for SNU 4190.406B (Mobile Computing and Its Applications)

Developed an `Android` application for protecting child pedestrians from distractions. Designed and implemented deep learning models for outdoor activity detection with accelerometer, RSSI, and sound data. Optimized models with quantization, pruning, and neural architecture search. (https://shorturl.at/c6VkJ)

Accelerating Sequence-to-Sequence Machine Translation Model Spring 2023

Project for SNU M1522.006700 (Scalable High Performance Computing)

Accelerated Sequence-to-Sequence machine translation model throughput on multiple NVIDIA GPUs using `CUDA` and `MPI`.

Skills

Programming: `C++`, `C`, `Python`, `Verilog`, `Java`, `Pytorch`, `Tensorflow`, `Bash`, `CUDA`, `RLLib`, `Amaranth`, `TFLite`, `Linux` kernel, `DAMON`, `LLVM`

Languages: English (TOEFEL 109/120), Korean

Military Service

Defense Communication Command, Republic of Korea Army 2024.07 - 2026.01

Operated military microwave wireless communication system.

Last modified: January 28, 2025