

Jaewoo Park

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Education

UNIST, Ulsan National Institute of Science and Technology <i>Department of Physics, Undergraduate</i>	2021.03 - Present UNIST
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Affiliation

Embedded & Cyber-Physical Systems Lab, UC Irvine <i>Visiting Scholar</i>	2022.06 - 2022.08 aicps.eng.uci.edu
Intelligent Computing and Codesign Lab <i>Researcher</i>	2020.12 - Present iccl.unist.ac.kr
Extragalactic Astrophysics Laboratory <i>Researcher</i>	2021.08 - 2022.03 galaxy.unist.ac.kr

Researches

ReRAM based NPU Fabrication <i>Jaewoo Park, Minsang Yu, Prof. Mohammad Al Faruque, Prof. Jongeun Lee</i> <ul style="list-style-type: none">Mixed-signal VLSI DesignOff-chip training with ReRAM Simulator	2022.05 - Present ICCL, UNIST & UC Irvine
In-Memory Processing Architecture for Fully Homomorphic Encryption <i>Jaewoo Park, Kevin Nam, Prof. Yunheung Paek, Prof. Jongeun Lee</i> <ul style="list-style-type: none">Novel In-memory processing hardware with DRAM TechnologyIn Memory Datapath for FFT	2022.04 - Present ICCL, UNIST & SNU
Squeezing Accumulators in Binary Neural Network Accelerators, ICCAD 2022 <i>Azat Azamat, Jaewoo Park, Prof. Jongeun Lee</i> <ul style="list-style-type: none">Reducing the accumulator size of Matrix multiplication on DNNsCustom CUDA Kernel w pytorch & numpyPresenter in ICCAD 2022	2021.10 - 2022.03 ICCL, UNIST
Centered Symmetric Quantizer, BMVC 2022 <i>Jaewoo Park, Faaiz Asim, Prof. Jongeun Lee, Azat Azamat</i> <ul style="list-style-type: none">Low-bit DNN quantization	2021.04 - 2021.09 ICCL, UNIST
Redshift Frontier using the James Webb Space Telescope <i>Jaewoo Park, Sandro Tacchella</i> <ul style="list-style-type: none">HPC simulation of Cosmological Galaxy EvolutionBayesian inference of JWST data	2021.08 - 2022.03 Extragalactic Lab, UNIST

Teaching

Instructor of EEE326: Tensor Processor Design @ UNIST https://iccl.unist.ac.kr/~lab/Users/JongeunLee/ee326/projects.html <ul style="list-style-type: none">Custom NPU design on Xilinx ZYNQ using HLSQuantization aware network training w pytorch	2022.03 - 2022.06 ICCL, UNIST
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Awards and Honors

Winner of 2022 Competition of Computational Relativity and Gravitational Waves	KASI, NIMS
IOAA 2020, International Olympiad of Astronomy and Astrophysics	
ISEF 2020, International Science and Engineering Fair	

Technical Skills, Language Skills, and Interests

OS: Linux, Mac OS
Programming Languages: C, Fortran (F90), Python, Haskell, Verilog, HLS, Chisel, Assembly (x86, ARM, MIPS, RISC-V), SPICE
Libraries: numpy, pytorch, XLA, IntelMPI, CUDA
Languages: Korean (native), English (fluent)
Interests: CGRA, DNN compilers, NPU, HPC