Jae-Won **Chung**

Computer Science · Computer Engineering

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Summary

I am a senior student majoring Electrical and Computer Engineering at Seoul National University, South Korea. I am interested in software systems that support deep learning workloads. I have experience on GPU cluster resource management, DNN computation offloading, and meta-learning. I also try to follow up on state-of-the-art deep learning research during my free time.

Education

Seoul National University

Seoul, South Korea

B.S. student in Electrical and Computer Engineering

2015 - Present

- Current GPA: 4.09/4.3 (overall) 4.15/4.3 (major)

Research Experience

Software Platform Lab

SNU, South Korea

Research Intern

Apr 2020 - Present

- Working on *Crane*, an elastic GPU cluster resource manager for deep learning workloads.
- Working with Professor Byung-Gon Chun.

Virtual Machine and Optimization Lab

SNU, South Korea

Senior Project

Dec 2019 - Jun 2020

- Distributed DNN inference, Mobile Computing
- Worked with Professor Soo-Mook Moon on developing a server-client collaborative DNN inference scheme.
- Proposed a distributed video DNN inference method that drastically reduces network traffic by exploiting intermittent knowledge distillation.
- Implemented the scheme with PyTorch and OpenMPI with an NVIDIA Jetson Nano embedded board as the client and conducted evaluation.

Computer Vision Lab

SNU, South Korea

Research Intern

Jun 2019 - Dec 2019

- Meta-learning, Few-shot Classification
- Conducted research on better meta-initialization points for Model-Agnostic Meta-Learning (MAML) using an LSTM-based neural memory.
- Conducted research on generating task-aware class embeddings to augment feature maps of MAML with a convex program (DPP).

Lab of Imaging Science and Technology

SNU, South Korea

Research Intern

Jun 2019 - Aug 2019

- Deep Learning methods for Quantitative Susceptibility Mapping (QSM)
- Worked with Professor Jongho Lee and submitted our solution to the QSM challenge held by the 5th International Workshop on MRI Phase Contrast and QSM.
- Designed, implemented, and trained a U-Net variant on in-vivo brain MRI field images and their COSMOS results.

Extracurricular Activity

Deepest

SNU, South Korea

Member

Dec 2018 - Present

- A free research group on all domains of deep learning. Aggregates researchers from both academia and industry with various backgrounds.
- Gained experience extensively in computer vision and meta-learning, and attended talks on computer vision, natural language processing, reinforcement learning, and speech recognition.
- Gave a talk with the title ”Meta-Learning plus Memory”.

Coursera Global Translator Community

translate-coursera.org

Language Coordinator

Oct 2018 - Present

- An official Coursera community that translates Coursera lecture subtitles.
- Served as Language Coordinator, a selected position that reviews and confirms works by other translators.
- Created Korean subtitles for Coursera Lectures initially provided only in English. Focused on courses related to machine learning.

Teaching

- **Fall 2020 Computer Organization (Undergraduate architecture),** Peer tutor, provided 30 hours of online lecture

Skills

Programming Python, PyTorch, C, Verilog, LaTeX, C++, CUDA, MATLAB, Go, JavaScript, Rust

English TOEFL 120 (Perfect score, Feb 2020), TOEIC 990 (Perfect score, Oct 2018), GRE 167/170/4.5 (Mar 2018)

Publications

- **ShadowTutor: Distributed Partial Distillation for Mobile Video DNN Inference,** Jae-Won Chung, Jae-Yun Kim, Soo-Mook Moon, 49th International Conference on Parallel Processing, 2020 (Acceptance rate = 29%)