Curriculum Vitae/Resume
http://donghwanjang.github.io

DONG-HWAN JANG

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EDUCATION

Carnegie Mellon University — **Pittsburgh, U.S.** — **2022 Fall**
- Visiting Scholar in an AI-related project-focused intensive program, fully funded by the Korean Government.

Seoul National University — **Seoul, Korea** — **2020 Fall – 2023 Fall**
- M.S. in the Department of Electrical and Computer Engineering. Advisor: Bohyung Han

Seoul National University — **Seoul, Korea** — **2013 – 2019**
- Department of Liberal Studies, **Summa Cum Laude (1st out of 35)**
  - B.S. in the Department of Electrical and Computer Engineering
  - B.S. in Technology Management

Korea Science Academy of KAIST — **Busan, Korea** — **2010 – 2012**

PUBLICATIONS

- **Dong-Hwan Jang**, Sangdoo Yun, and Dongyoon Han. "Model Stock: All We Need is just a few Fine-Tuned Models," *ECCV 2024 (Oral, Top 8.35% among accepted papers)*. [link]
- Taehoon Kim, **Dong-Hwan Jang**, and Bohyung Han. "Merge and Bound: Direct Manipulations on Weights for Class Incremental Learning," *Under Review*.[link]
- **Dong-Hwan Jang**, Sanghyeok Chu, Joonhyuk Kim, and Bohyung Han. "Pooling Revisited: Your Receptive Field is Suboptimal," *CVPR* 2022.[link]
- Jimi Kim*, Seojin Jang*, Woncheol Lee*, Joong Kun Lee*, and **Dong-Hwan Jang***. "DS4C Patient Policy Province Dataset: a Comprehensive COVID-19 Dataset for Causal and Epidemiological Analysis," *NeurIPS Workshop* 2020. (* indicates equal contributions) [link]

TECHNICAL EXPERIENCES

Academic Projects

- **DynOPool - Pooling Revisited: Your Receptive Field is Suboptimal** challenges conventional neural network design methodologies, introducing a novel pooling layer.
  - Focused on optimizing the network structure in a differentiable way to minimize inductive bias.
  - Resulted in a significant publication (detailed in the Publications section).
- **Implicit Neural Representation for Motion Deblur** employs spatially-variant motion deblur based on Implicit Neural Representation.
  - A spatially-variant deblurring network takes deformed features and their offsets as inputs.
  - It shows superior performance to the state-of-the-art methods on the restoration of downsampled and motion-blurred images.
  - *U.S. Patent Application Number: 17/973,809 (in progress)*
- **Model Stock: A Novel Weight Merging Method for Fine-tuning Pretrained Models** introduces a powerful approach to improve model performance by merging weights from different random seeds.
  - Unveils geometric patterns of fine-tuned models residing on a thin shell. Utilizing this discovery, we developed a novel weight merging method that markedly enhances model robustness and performance.
  - Provides new insights into weight merging, highlighting an underexplored area of model optimization.
  - Currently expanding this method to encompass weights fine-tuned under various configurations, broadening its applicability and potential impact.

Personal Project

- **Dataset for COVID-19 (DS4C):** Created the world's 3rd most impactful COVID-19 dataset with fine-grained patient-level data and policy-level data [Kaggle]
  - The dataset is used by researchers from all over the world to study the impact of policies on COVID-19 spread..
  - Interview article about NeurIPS workshop paper with AITimes [Korean] [English (auto-translated)]

INVITED TALKS

Korean Conference on Computer Vision — **Seoul, Korea** — **2022**

- 20 minutes oral presentation (top 23.5% among published papers) on CVPR paper “Pooling Revisited: Your Receptive Field is Suboptimal” presented by prof. Bohyung Han

Databricks Invited Talk **San Francisco, U.S. (remote)** **2020**
- 1 hour talk on “The Complexities around COVID-19 Data” invited as DS4C team [link]

Scholarships & Award

Government Scholarship for Overseas Study **Korea Government** **2023 – 2024**
- Awarded a prestigious scholarship intended for international Ph.D. programs, recognizing top 64 candidates across all majors in South Korea. (Note: Scholarship was not utilized due to non-admittance into the program.)

OnDream Global Scholarship Award **Hyundai Chung Mong-Koo Foundation** **2022**
- Award Prize - around *USD 2,350*
- For the paper “Pooling Revisited: Your Receptive Field is Suboptimal” at CVPR 2022

OnDream Future Technology Scholarship **Hyundai Chung Mong-Koo Foundation** **2021 – 2022**
- Covers full tuition & financial support.

National Scholarship for Science and Engineering **Korea Student Aid Foundation** **2015 – 2016**
- Covers full tuition.

Employment

Research Engineer **Samsung Adv. Institute of Tech, Korea** **2024 January–Present**
- Conducting advanced research in deep learning and fine-tuning techniques.
- Serving as a research engineer focusing on AI research and development in the semiconductor domain.

Backbone Research Intern **NAVER AI Cloud, Korea** **2023 July–December**
- Conducted research on robust fine-tuning based on weight merging and proposed a novel method, ”Model Stock.”
- Advised by Dongyoon Han and Sangdoo Yun.

Research Scientist **Mind’s Lab, Korea** **2019**
- Conducted low-level vision research, which included:
  - Weakly-supervised segmentation based on inpainting.
  - Colorization of grayscale images using spatially-adaptive denormalization.
- Engaged in a month-long project at Alberta Machine Intelligence Institute, Canada (May 2019).
- This role was part of fulfilling South Korean mandatory military service duty.

Software Engineer **TNC Technology, Korea** **2017–2018**
- Developed a Java-based payment gateway server for the company’s clients.
- This role was part of fulfilling South Korean mandatory military service duty.

Teaching Experiences

- Teaching Assistant for *430.329: Introduction to Algorithms* at Seoul National University (Fall 2020)
- Teaching Assistant for *Samsung AI Expert Course* at Seoul National University (July 2019)
- Teaching Assistant for *Hyundai Motors AI Expert Course* at Seoul National University (Jan 2019)

Extracurricular Activities

- NeurIPS 2022, 2023 reviewer, CVPR 2023 reviewer
- Deepest: Seoul National University’s AI club (2019 – 2020)