

Joel Jang

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RESEARCH INTERESTS

Temporal/Domain Adaptation of Large Language Models, Continual Learning, Knowledge-Intensive Tasks

EDUCATION

M.S. & Ph.D. (Integrated) in Artificial Intelligence

[Language & Knowledge Lab](#) | [Graduate School of AI, KAIST](#)

Advisor: [Minjoon Seo](#)

Seoul, Korea

March 2021 – Present

B.S. in Computer Science and Engineering

Korea University

Advisors: [Jaewoo Kang](#), [Heuiseok Lim](#)

Seoul, Korea

March 2017 – February 2021

PUBLICATIONS

Peer-Reviewed Conference/Journal Papers

[1] Towards Continual Knowledge Learning of Language Models

[Joel Jang](#), Seonghyeon Ye, Sohee Yang, Joongbo Shin, Janghoon Han, Gyeonghun Kim, Stanley Jungkyu Choi, Minjoon Seo

ICLR 2022 (*poster*), [Spa-NLP @ ACL 2022](#) (*oral*) [[paper](#)] [[code](#)]

[2] Sequential Targeting: A Continual Learning Approach for Data Imbalance in Text Classification

[Joel Jang](#), Yoonjeon Kim, Kyoungcho Choi, Sungho Suh

ESWA 2021 [[paper](#)] [[code](#)]

[3] Supervised Health Stage Prediction Using Convolution Neural Networks for Bearing Wear

Sungho Suh, [Joel Jang](#), Seungjae Won, Mayank S. Jha, Yong Oh Lee

Sensors 2020 [[paper](#)] [[code](#)]

Preprints

[4] TemporalWiki: A Lifelong Benchmark for Training and Evaluation Ever-Evolving Language Models

[Joel Jang](#)^{*}, Seonghyeon Ye^{*}, Changho Lee, Sohee Yang, Joongbo Shin, Janghoon Han, Gyeonghun Kim, Minjoon Seo

[arXiv:2204.14211](#), [Spa-NLP @ ACL 2022](#) (*poster*) [[paper](#)][[code](#)]

[5] Music2Video: Automatic Generation of Music Video with fusion of audio and text

[Joel Jang](#)^{*}, Sumin Shin^{*}, Yoonjeon Kim^{*}

[arXiv:2201.03809](#) [[paper](#)] [[code](#)]

[6] Prompt Injection: Parameterization of Fixed Inputs

Eunbi Choi, Yongrae Jo, [Joel Jang](#), Minjoon Seo

(* denotes equal contribution)

ACADEMIC EXPERIENCES

Language & Knowledge Lab | Graduate School of AI, KAIST

Seoul, Korea

Graduate Researcher (Advisor : [Minjoon Seo](#))

March 2021 – Present

Working on continual learning of large language models

NLP & AI Lab | Korea University

Seoul, Korea

Undergraduate Research Intern (Advisor : [Heuiseok Lim](#))

March 2020 – June 2020

Basic NLP Research including Machine Reading Comprehension, Open-Domain Question and Answering, Natural Questions, and Language Models. Placed 4th place in AI NLP Challenge Eniple Cup (fine-tuning large models).

AI Research Lab | Korea University

Seoul, Korea

Undergraduate Research Intern (Advisor : [Dongsuk Yook](#))

December 2018 – February 2019

Implemented multiple-GPU parallel model training algorithm (Features Replay Algorithm) using CUDA programming

INDUSTRY EXPERIENCES

NAVER AI Labs

Seoul, Korea

Research Collaborator (Collaborator : [Sangwoo Lee](#))

February 2022 – Present

Leading a research project on developing novel methods for continual learning of LMs using entity-aware Mixture-of-Experts (MoE)

LG AI Research

Seoul, Korea

Research Collaborator (Collaborator : [Joongbo Shin](#))

June 2021 – February 2022

Leading a research project on developing benchmarks for temporal adaptation of large LMs [1,4]

Kakao Brain

Seongnam, Korea

Research Intern (Mentor : [Ildoo Kim](#))

December 2020 – February 2021

Worked on large-scaled representation learning with weakly supervision of images and caption data using TPUs.

NAVER Corp. | Media Tech Group

Seongnam, Korea

Research Intern

July 2020 – September 2020

Worked on hate speech detection model, AI Clean Bot 2.0 (40+ million monthly users, >80% of Korean population)

Developed novel method of handling data imbalance using continual learning (*paper published under ESWA*)

Korea Institute of Science and Technology European Research Centre

Saarbrücken, Germany

Research Intern (Mentor : [Yong Oh Lee](#))

August 2019 – January 2020

Worked on anomaly detection & remaining useful life prediction of machinery (*paper published under Sensors*)

Gave an Oral Presentation at *PHM Korea 2020* (2020. 07. 23)

HONORS AND AWARDS

Grand Prize in Graduation Capstone Competition (Best Paper Award), 2020 (Advisor: [Jaewoo Kang](#))

4th place, AI NLP Challenge Eniple Cup, 2020

3rd place, HAAFOR Challenge 2019

Future Global Leader Scholarships, Korea University, 2019

Best Innovation Award, Intel AI Drone Hackathon, 2018

SERVICES

Journal Sub-reviewer

Journal of Artificial Intelligence Research (JAIR)

TEACHING

(KAIST AI605) Deep Learning for NLP

Teaching Assistant (TA)

Spring 2022

INVITED TALKS

Temporal Adaptation of Language Models

Hyperconnect

May 2022

Temporal Adaptation of Language Models

Korea University

February 2022

TECHNICAL STRENGTHS

Coding

Tensorflow, Pytorch, Huggingface, Pytorch-Lightning, Deepspeed, Wandb

Others

Large-scale models, Multi-node parallel training, Spot VM instances, Amazon Mechanical Turk

LANGUAGE PROFICIENCY

Bilingual in English (2004-2016 in US) and Korean (*native*)

GRE: 326 (Verbal, 157/170, 76th Percentile) | Quant, 169/170, 95th Percentile | Writing, 5.0/6.0, 92nd Percentile)

TOEFL: 119/120 (Reading, 30 | Listening, 30 | Speaking, 29 | Writing, 30)

SAT: 1530/1600 (Reading and Writing, 730 | Math, 800)

Conversational in Chinese