

Yoo Sung Jang

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Education

University of Wisconsin–Madison | Madison, WI

May 2022

Bachelor of Science, Computer Sciences

Bachelor of Science, Mathematics: Mathematics for Programming and Computing

- Final GPA: 3.9/4.0

Relevant Coursework: Probability and Information Theory in Machine Learning, Matrix Methods in Machine Learning, Intro to Artificial Intelligence, Mathematical Methods in Data Science, Intro to Bioinformatics, Linear Optimization, Linear Algebra and Differential Equations, Intro to the Theory of Probability, Applied Mathematics Analysis I

Honors & Distinctions

- Degree Honors: Graduated with Distinction (*top 20%*)
- Honors: Distinction in Major
- Dean's List (*6 times*)

Research Interests

- Goal alignment of large generative models
- Democratization of AI

Publications

- Bruce W. Lee, Yoo Sung Jang, Jason Hyung-Jong Lee
Pushing on Text Readability Assessment: A Transformer Meets Handcrafted Features
Empirical Methods in Natural Language Processing (**EMNLP**), 2021

Research & Relevant Work Experiences

Samsung Electronics, AI/Big Data Lab | Suwon, South Korea

September 2022 – Present

Research & Development Software Engineer

- Finetuned 6B parameter Large Language Model in a distributed setting with parameter efficient finetuning method to serve open domain chat for task-oriented conversational agent
- Distilled diffusion-based text-to-image model using consistency distillation and reduced denoise steps, resulting in halved inference time
- Trained large models and managed large datasets on AWS-based cloud computing platform

Krafton | Seoul, South Korea

June 2022 – August 2022

Machine Learning Researcher Intern

- Participated on audio and text multimodal model research to learn audio embeddings and implemented a speech synthesis task to evaluate the model
- Accelerated the preprocessing of a large-scale dataset by utilizing multi-processing, yielding a roughly linear performance improvement with the number of processes

University of Wisconsin-Madison, Psychology | Madison, WI

February 2022 – October 2022

Computational Research Assistant, Advisor

- Managed and designed a computational pipeline of a project, which quantified rodent's vocalization and movement, facilitating off-the-shelf deep learning research frameworks: DeepLabCut and DeepSqueak
- Implemented a sound source separation algorithm that reconstructs individual vocal source by solving linear equation

- Conducted technical interviews with 5 candidates for the computational research assistant position, accessing qualifications by inquiring on machine learning background

Samsung Electronics, Intelligent Solution Lab | Suwon, South Korea

June 2021 – August 2021

Research Development Software Engineer Intern

- Implemented a tree-structured pipeline that iterates in depth-first (DFS) manner, stabilizing memory usage, with the goal of creating a synthetic dataset
- Trained GAN model to enhance audio signals, and showcased the result with benchmarks to discuss the potential of the new approach in the existing speech enhancement project

LXPER | Seoul, South Korea

February 2021 – June 2021

Machine Learning Engineer

- Adopted and finetuned various state-of-the-art NLP models specialized for downstream tasks, including abstractive summarization, word sense disambiguation, and sequence classification, to generate English test sets for Korean SAT
- Researched on modern approach for readability assessment and submitted findings to EMNLP, a prestigious NLP conference

University of Wisconsin-Madison, ECE | Madison, WI

October 2020 – December 2020

Independent Study

- Attended online NLP course offered by Stanford, with guidance from Prof. Kangwook Lee throughout
- Prepared and presented biweekly 15-minute seminars on NLP

Certificates

Machine Learning, by Coursera

July 2020 – September 2020

Skills & Languages

Computer: Python, PyTorch, Hugging Face, Git

Language: English, Korean

References

Kwanghyun Koh, Ph.D.

Laboratory Leader

AI/Big Data Lab, Visual Display Department

Samsung Electronics

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Catherine Marler, Ph.D.

Professor

Department of Psychology

University of Wisconsin-Madison

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Kangwook Lee, Ph.D.

Assistant Professor & KRAFTON Deep Learning Research PI

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