

# Ahn Young Jin (He/Him)

[github.com/snoop2head](https://github.com/snoop2head)

## EDUCATION

### Korea Advanced Institute of Science and Technology (KAIST)

Seoul, South Korea

*M.S. in Artificial Intelligence*

September 2023 –

- Advisor: Kee-Eung Kim

### Yonsei University

Seoul, South Korea

*B.A. in Economics & Minor in Applied Statistics*

March 2015 – August 2023

- GPA: 3.81 / 4.3 overall, [ECON] 3.78/4.3, [STATS] 3.89/4.3
- Relevant coursework: [STATS] Mathematical Statistics A+, R and Python Programming A+ [CS] Theory and Practice of Deep Learning A+, Data Structures B+

## TECHNICAL SKILLS

**Languages** Python, R, JavaScript, Rust (\* in the order of fluency)

**Libraries** PyTorch, Pytorch Lightning, Huggingface, Jax, Flax, Haiku, OpenCV, Docker, Django

## LANGUAGE SKILLS

**Korean** Native.

**English** Fluent, TOEFL iBT 110/120, Served as KATUSA platoon leader in USANEC Casey.

**Chinese** Novice, HSK 4.

## RESEARCH EXPERIENCES

### Principal Investigator

September – November 2022

*Ministry of Science and ICT funded Private Data Neural Filtering National R&D Project*

- Managed ₩200,000,000 research fund and research participants.
- Provided data labelling companies with annotation guidelines of privacy benchmark dataset.

### Research Intern

July – August 2022

*Cyber Security Lab. Department of Computer Science, College of Computing, Yonsei University*

- Implemented membership inference attack methods on Large Language Models and CNNs.

### Research Intern

January 2023 –

*Vision and Learning Lab. Department of AI, College of Computing, Yonsei University*

- Devised joint classification approach of time-aligned quantized tokens on visual speech recognition.
- Achieved SOTA performance in Lip Reading in the Wild benchmark.

## PROJECT EXPERIENCES

### KoDALLE: Text to Fashion | [Github Repo](#)

November 2021 – January 2022

*Generating dress outfit images based on given input text*

- Resolved scarcity of target language dataset with pretrained language model's embedding.
- Preprocessed and maintained versions of 1 million pairs of image-caption dataset.
- Trained model from scratch for VQGAN and DALLE.

**DotNeuralNet & DotT5** | [Github Repo](#) | [Demo](#)

March 2023

*End-to-end optical braille recognition to braille pattern translation*

- Generalized over non-existent braille signs by one hot encoded multi label classification.
- Trained light-weight object detection model for braille recognition in natural scenes.
- Built braille to text conversion T5 model with BLEU score of 75%.

**ElimNet** | [Github Repo](#)

October 2021

*Eliminating top layers in a neural network pretrained with large dataset for downstream task.*

- Replaced time-consuming and underperforming NAS models with pruned CNN models.
- Removed top layers from pretrained CNN to create lightweight model less than 1M #params.
- Saves inference time by 20% while maintaining or improving its performance.

**Gomoku-GPT** | [Demo](#)

April 2023

*GPT trained with curriculum learning consisted of MCTS and supervised learning for Gomoku game.*

- Trained GPT from scratch as policy neural network in order to eradicate CNN's problem of sparse feature extraction and lack of sequential data processing.
- Complemented reinforcement learning's asymmetry problem with supervised learning.

**KoGPT-Joong-2** | [Github Repo](#) | [Demo](#)

December 2021

*Emotional prompts for 1.2B #params GPT model finetuned with lyrics and poetry dataset.*

- Generated sentences and acrostic poems based on emotional prompt.
- Maintained huggingface hub demo hosting GPT model with LM head.
- Finetuned KoGPT-Trinity with huggingface trainer.

**Realtime Turtleneck Alert** | [Github Repo](#) | [Demo](#)

November – December 2020

*Real-time desk posture detection through webcam.*

- Converted image dataset into Yaw/Pitch/Roll numerical dataset using RetinaFace model.
- Trained and hypertuned random forest classification model with precision rate of 93%, outperforming CNN models by +20%p margin.

**COMPETITIONS****NIPA Machine Reading Comprehension Competition** | [Github Repo](#)

June - July 2022

*(2<sup>nd</sup> place / 26 companies) Question answering task of extracting answers from given context.*

- Specified metrics into start token prediction accuracy and end token prediction accuracy.
- Customized model head with multi sample dropout, LSTM head and CNN head.
- Replicated performance in low computing resource with FP16 and gradient accumulation.

**Ministry of Statistics Korean Standard Industry Classification**

April 2022

*(7<sup>th</sup> place / 311 teams) Sequence classification task for classifying 200 categories and sub-categories.*

- Compared across publicly available pretrained language models' performances.
- Constructed train and inference pipeline in pytorch lightning.

**Dacon KLUE Natural Language Inference Competition** | [Github Repo](#)

January 2022

*(1<sup>st</sup> place / 468 teams) Utilizing R-BERT and Improved Baseline architecture from TACRED.*

- Applied typed-marker method introduced in Zhou et al(ACL-IJCNLP 2022) and selective sentence pooling approach from Wu et al(CIKM 2019) for the given NLI task.
- Composed custom dataset, trainer, and inference pipeline in pytorch.

**Dacon Code Clone Detection Competition** | [Github Repo](#) June 2022

(3<sup>rd</sup> place / 337 teams) Identifying code similarity with encoders from seq2seq model.

- Solved token length constraint by dropping code blocks, removing comment lines and filtering out unused function within the code.
- Implemented regularization method for input sequence order with KL-Divergence loss referencing Wu et al(NeurIPS 2021).

**Dacon Stock Price Prediction Competition** | [Github Repo](#) September 2021

(6<sup>th</sup> place / 205 teams) Predicting the Closing price of 376 Korean public companies.

- Validated the model's performance on ARIMA, RandomforestRegressor and ElasticNetCV.
- Derived financial data utilizing TA-Lib and FinanceDataReader.

**Geulstagram Dataset** | [Github Repo](#) September 2019 – March 2020

3<sup>rd</sup> place for Selectstar & National Information Society Agency(NIA) dataset proposal competition.

- Managed pull request / version control for emotional Instagram posts(Geulstagram) dataset.
- Converted Korean image file to text file using Google Cloud Vision API.

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## OPENSOURCE CONTRIBUTION

**docker/docker.github.io** | [Pull Request](#) March – April 2020

Source repo for Docker's Official Documentation.

- Updated PostgreSQL initialization for "Quickstart: Dockerizing Django" documentation.

**NVlabs/stylegan2-ada-pytorch** | [Pull Request](#) November 2021

Source repo of NVIDIA Research for StyleGAN2-ADA.

- Fixed torch version comparison fallback error.

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## WEB PROJECTS

**yonsei.exchange** | [Github Repo](#) | [Website](#) July 2021 –

Studying abroad summaries for Yonsei students: 22000 Pageviews & Average Retention Time 3 min+

- Collected and preprocessed 11200 text review data from the Yonsei website.
- Visualized department distribution and weather information using matplotlib.
- Sentiment analysis on satisfaction level for foreign universities with pretrained BERT model.
- Clustered universities with provided curriculum with K-means clustering.

**FitCuration** | [Github Repo](#) February – April 2020

Search-based exercise retrieval web service.

- Built retrieval algorithm based on search keyword using TF-IDF.
- Deployed website using Docker, AWS RDS, AWS S3, AWS EBS.
- Constructed backend using Django, Django ORM & PostgreSQL.

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## HONORS AND AWARDS

Academic Honors, Yonsei University

Spring, 2015

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## LEADERSHIP AND SERVICE

Academic support for North Korean refugee students, 80+ hours

September 2015 – April 2016

Yonsei Vision Up academic support for high school students

March – December 2016

Military Service for Republic of Korea, Senior KATUSA

September 2017 – May 2019