

Soyoung Yoon

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RESEARCH INTEREST

Natural Language Processing, Machine Learning, Social Computing, Software Engineering

RESEARCH EXPERIENCES

Individual study at KAIST U&I lab (<https://uilab.kaist.ac.kr>)

Sep. 2019 ~

Advisor: Alice Oh (<https://aliceoh9.github.io/>)
Participate on machine learning reading group

News trend analysis

Fall 2019

Identified top ten most significant issues for each year and rank them from news articles over the period of three years. (2015 – 2017) Implemented by [pandas](#), [genism](#), and [nltk](#).

Conducted topic modeling by LDA. Promoted topic quality by neuroNER (Implemented methods suggested by <https://www.aclweb.org/anthology/P18-2040/>)

Report: https://github.com/soyoung97/Topic_modeling-Issue_Tracking/blob/master/report/report.pdf

Replicate & modify LM (<https://github.com/soyoung97/awd-lstm-gru>)

Fall 2019

Replicated *Regularizing and Optimizing LSTM Language Models*
(<https://arxiv.org/abs/1708.02182>)

Modification by replacing LSTM model to BiLSTM and GRU, each gaining improvement on validation loss and training time.

Poster: <https://github.com/soyoung97/awd-lstm-gru/blob/master/poster.pdf>

URP(Undergraduate Research Project)

Jan. 2020 ~

Research on Grammatical Autocorrection for Korean via fine-tuning pre-trained Language Models (<https://github.com/soyoung97/Grammatical-Autocorrection-Korean>)

Proposal for the research(In Korean): <https://soyoung97.github.io/urp.pdf>

Main contribution:

- Trained models (bart, transformer, lstm) using [fairseq](#) library
- Made naïve-transformer model using [pytorch](#)
- Replicated copy-attention model for Korean (<https://www.aclweb.org/anthology/N19-1014.pdf>)
- Preprocessed and tokenized Korean data using [numpy](#), [pandas](#), [hgtk](#), and [sentencepiece](#)

Advisor: Sungjoon Park(<https://sungjoonpark.github.io>), Alice oh

EDUCATION

University

Korea Advanced Institute of Science and Technology (**KAIST**), Daejeon, South Korea

Bachelor of Computer Science

Feb. 2016 ~ Feb. 2021 (expected)

Major course

Discrete Mathematics, Data Structure, Programming Principles, System Programming, Linear Algebra, Computer Organization, Algorithms, Operating Systems, Computer Networks, [Computer Vision](#), Programming Languages, [Text mining](#), [Machine Learning](#), [Natural Language Processing](#)

GPA

Total: 3.72/4.3, (Major only: 3.86/4.3)

GPA of each semester: 3.37(Spring 2016) -> 3.17 -> 3.6 -> 3.78 -> 4.13 -> 3.77 -> 4.06 (Fall 2019)

English Proficiency Tests

TOEFL, 108

Nov. 2018

MAJOR PROJECTS

Pintos (KAIST Course Project)

Spring 2018

I went through Pintos projects for the Operating System course in Spring 2018.

MadCamp (<https://www.madcamp.io>)

Summer 2018

I conducted 5 projects per week, mainly focusing on mobile app development, web programming based on Flask, Gan-based machine learning projects using Tensorflow.

I used GAN to transform black&white images to RGB images.

Model code implementation:

(https://github.com/soyoung97/madcamp3/blob/master/colorization_test.py)

Implement javascript library (<https://github.com/soyoung97/check>)

July. 2019

Check is a [javascript](#) opensource utility library for debugging, logging, assert, and data checking.

Software Engineer Intern, AITRICS (<https://www.aitrics.com>)

Jan. 2019 ~ Aug. 2019

I worked as a front-end and back-end server engineer, conducting hundreds of data per minute, using [Django-Rest Framework](#) and [Vue.js](#).

Major contributions:

- Profiled the speed of services by using Django-silk and Django-debug-toolbar. Optimized SQL queries for big amounts of input data using Django ORM.
- Implemented functions (Giving alarms at appropriate time, Calculating individual patient's medical score using celery and celery-beat) needed for the VitalCare product dashboard UI
- Made current products service well with newly made machine learning models
- Applied Recurrent Neural Network models to the inference server and computed the cosine similarity between real-word and trained data distributions
- Implemented test functions using pytest and python hypothesis
- Implemented dashboard UI by Vue.js (front-end)
- Mainly implemented patient's vital sign graph by using echarts (front-end)
- In charge of the front-end and back-end part of the VitalCare product

Site: <https://www.aitrics.com/>

ACCOMPLISHMENTS

Conference presentation talk at PyCon Korea 2019  Aug. 2019

Title: Django query optimization for medical AI data processing

(<https://www.pycon.kr/program/talk-detail?id=42>)

Slide: <https://www.slideshare.net/SoyoungYoon11/pycon-presentation-final>

Video: <https://www.youtube.com/watch?v=HpMYWk566OA>

Received National Graduate Science & Technology Scholarship 2018 ~ Present

Won ~\$500 for a semester (Merit-based scholarship)

Finalist @ Power of xx ctf <http://www.powerofcommunity.net/> 2018

Participated as one of the members of Power of xx team.

Conducting Mock Hacking Outsourcing for Hunesion Products 2018

Found two important vulnerabilities in their secure software and provided them with solutions.

Finalist @ Power of xx ctf <http://www.powerofcommunity.net/> 2017

Joined KAIST GoN team <http://gon.kaist.ac.kr> 2017 ~ Present

GoN is a KAIST hacking & security club that study hacking and participate in CTF.