

# Kim Ki Soo

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“The important thing is an unbreakable heart”

## EDUCATION

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### Kwangwoon University

March. 2018 – Feb.2024 (Expected)

B.S. in Information Convergence, Major in Data Science

- Total GPA : 4.31/4.5, Major GPA of 4.32/4.5 (Credits taken : 127/133)

## Internships

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### Undergraduate Research

July. 2022 – present

Undergraduate Researcher in PADA(Process Aware Data Analytics) Lab

- Development of key variables for classifying Customer Characteristics

## PROJECT EXPERIENCE

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### Analysis of the Venue network of people living in Seoul

Sep. 2022 – Dec.2022

- Term project for course Social Network Analysis of 2022-Fall semester (Team Leader)
- Analysis of the Venue network based on Foursquare SNS Check-In using NodeXL
- Guess hot places through people's check-in records and view daily life patterns.
- Comparing the phase difference in each region using the centrality indicator.

### Implementation of Algorithms to solve imbalance problem in Machine Learning

Sep. 2022 – Dec. 2022

- Term project for course Big Data preprocessing & application of 2022-Fall semester (Team Leader)
- Among imbalance techniques, SMOTE, Borderline-SMOTE and ADASYN are implemented with SPARK.
- Compared the difference between the case whether imbalanced technique is applied or not.
- 0.3 Improvements in f1-score occurred when Logistic Regression was used.

### Song recommendation system based on user's emotions

Mar. 2022 – June.2022

- Term project for course True Light Design Semester of 2022-Spring semester (Team Member)
- Predict emotions based on user posts on SNS and recommend songs with predicted emotions.
- To reduce sentiment prediction error, we use Cosine Similarity between SNS posts and songs.
- Deployed as a Chrome extension for practical use

### Topic Modeling by rating for [today's house] review for self-employed students

Mar. 2022 – June 2022

- Term project for course Text Mining of 2022-Spring semester (Team Leader)
- After Data gathering, we used Sentiment Analysis for rescoring review rates
- Topic Modeling was performed by rescoring by household.

### Prediction of heart disease based on imbalanced data

Mar. 2022 – June. 2022

- Term project for course Machine Learning of 2022-Spring semester (Team Leader)
- Analyzed data assumed to cause heart disease using Python
- Data preprocessing(replace NA, scaling, encoding) and Compared Machine Learning Algorithm with evaluation metrics(accuracy, f1 score).
- After modeling, we interpret why the model predicted it the way it did. (XAI)
- Learned how to improve imbalance data problem in machine learning tasks.

**Running App development for runners****Oct. 2021 – Dec. 2021**

- Individual project for course Mobile Programming of 2021-Fall semester
- The Application was developed based on 'Nike Run' Application.
- The Difference from existing Apps, it can measure while running and walking.
- Using DataBase, Intent, SQLiteDatabase, ListItem, MenuBar for measuring and searching records.

**Denver's Crime Rate Analysis Project****May. 2019 – June. 2019**

- Term project for course Introduction of Data Science of 2019-Spring semester (Team Member)
- Using Business Intelligence Software(Excel, Tableau) for Exploratory Data Analysis
- Derived various insights related to Denver's crime rate.
- Learned how to handle outliers and missing values and how to do spatial visualization in Tableau.

**EXTERNAL ACTIVITIES****Dacon Basic Competition, overseas Real Estate Monthly Rent Forecast****Dec. 2022**

- Participated in a contest hosted by Dacon during 2022-Fall Semester.
- Prediction of overseas real estate monthly rent based on the structure of residence, location, commercial district etc.
- After preprocessing(log transformation) and ensemble modeling, there was a rapid improvement in the loss function compared to the case where a single model was used and no preprocessing was performed.
- As a result of the contest, I was in the 9<sup>th</sup> place overall

**Dacon Basic Competition, a soccer player's prospect prediction****Nov. 2022**

- Participated in a contest hosted by Dacon during 2022-Fall Semester.
- Prediction of promising players using the ability information of players stored in FIFA 22
- Realized how to improve Macro F1 Score when there is a slight imbalance.
- Through hyperparameter tuning, ensemble and adjusting the threshold of the prediction probability, Macro F1 Score raised to 77.47%.
- As a result of the contest, I was in the 3<sup>rd</sup> place overall

**Dacon Basic Competition, travel product application prediction****Aug. 2022 – Sep.2022**

- Participated in a contest hosted by Dacon in 2022-summer vacation.
- Predicted whether to apply for travel products through basic information of customers and information related to travel products.
- Studied Machine Learning Basic Algorithm (LR, RF, XGB, LGBM, ETC)
- Through hyperparameter tuning and stacking ensemble, the accuracy raised to 91.88%
- As a result of the contest, I was in the 2<sup>nd</sup> place overall

**Dacon Basic Competition, Shopping Mall review rating prediction****Jul. 2022**

- Participated in a contest hosted by Dacon in 2022-summer vacation.
- Predicted ratings given by users based on reviews written by users
- Studied Transformer model and reading paper "Attention is All You Need (NIPS 2017)"
- Using KoBERT model, the accuracy raised to 65.05%
- As a result of the contest, I was in the top 22%.

**Student Association presentation club SPLING 47th****Jan. 2022 – June. 2022**

- Worked as a club management during 2022-Spring semester
- Served as a mentor to help members improve their presentation skills.
- As the head of the HR team, managed club members to keep the rules well.

**Student Association presentation club SPLING 45th****Aug. 2021 – Dec. 2021**

- Worked as a club member during 2021-Fall semester
- Improved the ability to create Powerpoint and presentation skills
- Received the Perfect Attendance Award and the Outstanding Graduation Award given to those who performed outstanding activities.

## Education Donation Program 'Sok Sok Camp'

Apr. 2021 – Sep. 2021

- Taught coding (entry) to 6<sup>th</sup> grade students during summer vacation. (Team Leader)
- As a Team Leader, planned and managed education and oversaw accounting and filming.
- Learned how to improve the quality of education and the importance of communicating with team members.

## SKILLS

**Programming:** Python, R, JAVA, C

**Data Analysis:** Numpy, Pandas, Matplotlib, seaborn, Tableau, NodeXL, Excel

**Machine Learning & Deep Learning :** Skicit-learn, Pytorch, Keras, TensorFlow

## Language Skills

Teps ???

TOEIC ???

OPIC ???

## AWARDS AND HONORS

[AWARDS]

3<sup>rd</sup> place in predicting soccer players promising 2022 (Dacon)

2<sup>nd</sup> place in predicting travel product application 2022 (Dacon)

Dean's list for academic excellence 2019 (Kwangwoon Univ.)

Dean's list for academic excellence 2018 (Kwangwoon Univ.)

[HONORS]

Semester high Honors for high achievements throughout the semester 2022 (Kwangwoon Univ.)

Semester high Honors for high achievements throughout the semester 2021 (Kwangwoon Univ.)

Semester high Honors for high achievements throughout the semester 2019 (Kwangwoon Univ.)

Honors Scholarships for TOEIC All Care excellent scholarship 2019 (Kwangwoon Univ.)

Semester high Honors for high achievements throughout the semester 2018 (Kwangwoon Univ.)

## Teaching & Assistant

**Software Vacation School** Jan. 2023 – Feb. 2023, Feb. 2022, Jul. 2022

- Course in Department of Information Convergence for freshman
- Tutored Python Programming and C Programming

**Discrete Mathematics teaching assistant** Sep. 2022 – Dec. 2022

- Course in Department of Information Convergence for freshman
- Marked Mid-term and Final Exam and proctored exam

**Tutoring middle/high school students** May. 2018 – Oct.2019, May. 2021 – (current)

- Taught Mathematics for middle/high school students
- Created hand-made books for students and develop test questions

## CERTIFICATION

Dacon Basic AI Competition to predict whether a soccer player will be promising (3<sup>rd</sup> place) Nov.2022

Dacon Basic AI Competition Travel product application prediction contest (2<sup>nd</sup> place) Aug.2022

Korean History Proficiency Test Level 1 Apr.2021

Structured Query Language Developer(SQLD) Mar.2021

Linux Master Level 2 Certification Oct.2019

