

# Kim Ki Soo

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(mobile) +82)10-9031-3642  
(email) [kisooofficial@naver.com](mailto:kisooofficial@naver.com)  
(github) <https://github.com/kisooofficial>  
(blog) <https://blog.naver.com/kisooofficial>

“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)
- Sentiment Analysis for rescoring review rates, Topic Modeling was performed by rescoring by household.
- Extract topic insights and suggesting future direction for each rating(rescoring)
- Learned Crawling, text tokenizing and vectorization, Deep Learning Model for text classification

### 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**

### **Student Association Big Data Club BOAZ**

**Jan.2023 – Jan.2024(Expected)**

- Worked as a club Member
- Learned Tableau for Data Visualization and Data Analytics
- Content will be add soon.

### **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**

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**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**

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**Teps** 341 (2023.02)**TOEIC** 840 (2019.01)**AWARDS AND HONORS**

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[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**

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**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**

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**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

