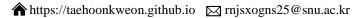
Tae Hoon Kweon



Research Interests

Artificial Intelligence (AI) in Bioinformatics

• AI models to enhance understanding of genetic variations and their implications on gene expression

AI-driven Precision medicine

• AI model predicts personalized drug response and identify promising individual drug candidates

Machine Learning in Drug discovery

• Models to design novel molecular structures, assess drug-ability, and predict various binding potentials.

Education

Seoul National University (SNU)

Seoul, Republic of Korea

M.S. in Computer Science and Engineering

(Advisor: Prof. Sun Kim)

Sep. 2023 – Present

The University of Michigan - Shanghai Jiao Tong University Joint Institute

Shanghai, China Sep. 2016 – Aug. 2021

B.S. in Electrical and Computer Engineering

• Mandatory military service after graduation (2 years)

Research Projects

Development of AI-based Model for Translational Research on Drug Responsiveness of Breast Cancer Patients

Developing patient-level deconvolution model

Aug. 2024 – Present

• co-working with SNU Hospital (Prof. Han-Byoel Lee)

Corresponding research:

Improving drug response prediction through bulk tumor deconvolution from single cells

Feb. 2024 – Present

- Bridge the gap between *in vitro* and *in vivo* datasets
- Plan to adopt a generative model for bulk tumor deconvolution

Analyzing the gene-level relationship between intratumoral heterogeneity of promoter DNA methylation and drug response Sep. 2023- Jun. 2024

- Developed a web-based exploratory data mining tool to identify significant correlations between intratumoral heterogeneity of promoter DNA methylation and drug response
- Gives an insight to understand drug response mechanism and guides precision oncology initiatives

Conference

Tae Hoon Kweon, Bonil Koo, Sungjoon Park, Thibaud Southiratn, Sun Kim. Web-based Exploratory Data Mining System for Analyzing the Gene-level Relationship between Intratumoral Heterogeneity of Promoter DNA Methylation and Drug Response. In *Proceeding of the 2024 Korea Computer Congress*, 2024

Teaching

Seoul National University

University Teaching Assistant, Algorithms

Fall 2024

• **Teaching Assistant**, IT fundamentals for Bioinformatics

Spring 2024

• University Teaching Assistant, Algorithms

Fall 2023

Extracurricular Activities

Smart Human Resource Development (SMHRD)

Gwangju, Republic of Korea

ML-based Big Data Analysis course

Dec.2020 – Feb. 2021

SMHRD Kaggle competition $(1^{st} / 27 \text{ teams})$

Jan. 2021

- Task: Personal Income Classification from multivariate personal data
- SMHRD Final project (1st / 27 teams)

Feb. 2021

• Task: YouTube creator growth predictions (multivariate time series forecasting)

Coursera courses

•	AI For Everyone, DeepLearning.AI (Andrew Ng)	May 2023
•	Python Data Structures, University of Michigan	May 2020
•	Programming for Everybody (Getting Started with Python), University of Michigan	May 2020

Technical Skills

Programming language Python, C/C++, MATLAB, R

Machine learningPytorch, TensorflowWebReact, D3.js, HTML, CSS