

Tae Hoon Kweon

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Research Interest

Artificial Intelligence (AI) in Bioinformatics

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

AI-driven Precision medicine and Drug discovery

- AI model predicts personal drug response based on genetic profiles and potential drug candidates

Education

Seoul National University

M.S. in Computer Science and Engineering

(Advisor: Prof. Sun Kim)

Seoul, Republic of Korea

Sep. 2023 – Present

military service (2 years)

The University of Michigan - Shanghai Jiao Tong University Joint Institute

B.S. in Electrical and Computer Engineering

Shanghai, China

Sep. 2016 – Aug. 2021

Research Projects

Predicting clinical drug response 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

Kweon TH, Koo B, Park S, Southirath T, Kim S. 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

- **Teaching Assistant**, IT fundamentals for Bioinformatics
- **University Teaching Assistant**, Algorithms

Spring 2024

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 | Topic: Personal Income Predictions | 1st / 27 teams
- SMHRD Final project | Topic: Youtube creator growth predictions | 1st / 27 teams

Jan 2021

Feb 2021

Coursera courses

- AI For Everyone | DeepLearning.AI (Andrew Ng)
- Python Data Structures | University of Michigan
- Programming for Everybody (Getting Started with Python) | University of Michigan

May 2023

May 2020

May 2020

Technical Skills

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

Machine learning Pytorch, Tensorflow

Web React, HTML, CSS