

HYUNG GYU MIN

Mobile: (+82) 10-9946-1878(KOR)
E-mail: hyunggyu.min@kqchub.com ; mhg9511@gmail.com
Website: <https://hgmin1159.github.io/>

Fields of Interest

Dimension Reduction Quantum Data Science Nonparametric Modeling Optimization

Education

Oct 2023 - Present	UNC at Chapel Hill , Chapel Hill, North Carolina PhD, Biostatistics
Sep 2020 - Oct 2023	Yonsei University , Seoul, Republic of Korea Master of Arts, Statistics GPA: 4.27/4.30 (4.00/4.00)
Mar 2014 - Aug 2020	Yonsei University , Seoul, Republic of Korea Bachelor of Arts, Applied Statistics Stat & Math GPA: 4.11/4.30 (3.91/4.00) Overall GPA: 3.70/4.30 (3.56/4.00)

English Proficiency

TOEFL iBT **101/120**: 30/28/23/20 (R/L/S/W) October 13, 2021
GRE General Test **V 161** (88%)/ **Q 169** (94%)/ **W 3.5** (37%) February 26, 2021

Extracurricular Study

Quantum Machine Learning	Schuld, M. & Petruccione, F. (2019). Supervised Learning with Quantum Computers, Cham, Switzerland: Springer
Theory of Hilbert Space	Debnath, L. & Mikusinski, P. (2005). Introduction to Hilbert Space. London, UK.: Elsevier Academic Press
Abstract Integration	Rudin, Walter. (1987). Real and Complex Analysis. Singapore: McGraw-Hill.
Convex Optimization	Boyd, S. & Vandenberghe, L. (2004) Convex Optimization. Cambridge, UK: Cambridge University Press.
Bayesian Statistics	Gelman, A., Carlin, B.J., ... & Rubin, D.B. (2021). Bayesian Data Analysis. Boca Raton, FL: CRC Press.

Teaching Experiences

Yonsei University	Teaching Assistant for Quantum Finance Computing (Sep 2022 - Dec 2022) Teaching Assistant for Multivariate Analysis (Sep 2022 - Dec 2022) Teaching Assistant for Theory of Dimension Reduction (Mar 2022 - June 2022) Teaching Assistant for Qiskit for Data Science (Mar 2022 - June 2022) Teaching Assistant for Big Data and Quantum Computing (Sep 2021 - Dec 2021) Teaching Assistant for Multivariate Analysis (Sep 2021 - Dec 2021) Teaching Assistant for Statistical Data Analysis (Mar 2021 - June 2021) - Prof. <i>Hakbae Lee</i>
Yonsei University	Teaching Assistant for Introduction to Statistics (Sep 2020 - Dec 2020) - <i>Instructor. Hogyu Lee</i>

Programming Skills

Python(Qiskit, Scikit-Learn, Tensor Flow), R(RCPP, Shiny, Tidverse)

Awards And Honors

May 2019 Excellence Prize for 2019 Embrain Panel Big Data Analysis Competition
Fall 2019 High Honors (Yonsei University)

Papers

Clinical Statistics	Effect of orally administered heat-treated <i>Lactobacillus plantarum</i> LM1004 on the innate immune system
Published	- Accepted at Journal of Functional Food (JFF) https://doi.org/10.1016/j.jff.2022.105293 - Executed penal data analyses using Generalized Mixed Model, Multivariate ANOVA and RM ANOVA
Microbiome Analysis	Altered gut microbiota in individuals with episodic and chronic migraine
Published	- Made poisson regression models and analyzed the relation between frequency of migraine and microbiota
Dimension Reduction	Binary Constrained Dimension Reduction for Sparse Data Analysis
In preparation	- A research to find better methods to handle the sparse data problem. - Using Quantum Annealing (QA), Simulated Annealing (SA) and Genetic Algorithm (GA) to find optimal solution of combinatorial problems.
Variable Selection	Variable Selection for linear model using quantum algorithm
In preparation	- A research for solving multi-collinearity problems using the Quantum Computer - Designed and suggested new measure of Quadratic Unconstrained Binary Optimization (QUBO) for finding the best combination of variables

Extracurricular Activities

Korea Quantum Computing	Department of Research and Development June 2022 - Present
Researcher (Assistant Manager)	- IBM Hub for the introduction of quantum computers and research company to study the Quantum Data Science
Director : Dr. Kion Kim	- Conducted research projects about Quantum Data Science and made several lectures for the beginner of the Quantum Computing.
Yonsei University	Quantum DnA Raboratory Mar 2022 - Present
Researcher	- The laboratory of Prof.Daniel Kyungdeock Park
Director: Prof.Daniel K. Park	- Researched about Quantum Convolutional Neural Network and Quantum Error Mitigation
Yonsei University	Institute of Data Science Mar 2021 - Present
Chief Consulting Assistant	- Institution to help statistical analyses of other department in university including biology, social science, engineering and etc.
Director: Prof. SeungHo Kang	- Worked as consulting assistant and consulted 20 numbers of cases at 2021 and Worked as chief consulting researcher and lead junior researchers at 2022.
Yonsei University	Data Science Lab (DSL) Jan 2019 - Dec 2020
Director of Academic Affairs	- Undergraduate academic society to study data science and statistical theories
Advisor: Prof. TaeYoung Park	- Acted as a founding member and constructed several programs for studies and projects

REFERENCES

Prof. Hakbae Lee hblee@yonsei.ac.kr	Yonsei University Department of Applied Statistics and Data Science Professor
Prof. Daniel Kyungdeock Park dkd.park@yonsei.ac.kr	Yonsei University Department of Applied Statistics and Data Science Professor
Prof. SeungHo Kang seungho@yonsei.ac.kr	Yonsei University Department of Applied Statistics and Data Science Professor
Dr. Kion Kim kion.kim@kqchub.com	Korea Quantum Computing Department of Research and Development Chief Researcher (General Manager)