

Curriculum Vitae

Yong Jin Kweon (Jin Kweon)

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- For more non-academic achievements, I would suggest to check out my LinkedIn (pg. 6).

Information

Born: 24 June 1996, Seoul, Korea.

Citizenship: Korea, Republic of

E-mail: yjkweon24@berkeley.edu or yjkweon24@hanmail.net or yjkweon24@gmail.com
or yong.kweon@mail.mcgill.ca

Mailing address: Seoul, S. Kor

Phone number: +82) 10-4995-2721

Interests

Multi-Omics, Single cell, Bio-statistics/informatics, Statistical computing, Modeling and regression, Statistical genomics/genetics, Big data analysis, Machine learning

Education

MSc Thesis in Experimental Medicine (Jan, 2023 ~)

McGill University, Montreal, Quebec, Canada

Supervisor: Jun Ding, PhD

Academic advisor: Janusz Rak, MD, PhD

PhD Candidate in Quantitative Life Science Withdrawn (Sep, 2018 ~ Dec, 2021)

McGill University, Montreal, Quebec, Canada

*Leave of absence for the military service – Jun, 2019 ~ May, 2021

BA in Statistics (Cluster: Mathematics/Economics) in May, 2018

University of California, Berkeley, California, U.S.

AS-T in Mathematics and Business Administration & AA-T in Economics in May, 2016

Diablo Valley College, Pleasant Hill, California, U.S.

Research

Cell type deconvolution Research under Professor Jun Ding

Jan 2023 -

McGill University

AI Drug Design Research under Professor Jun Ding

Sep 2021 – Nov 2021

McGill University

- Find the common modified VQ-VAE structure for both Control and Arac that is consistently representing already-defined (Leiden UMAP initialized by PAGA) full space clusters well.
- Apply Leiden clusters on UMAP initialized by Partition-based Graph Abstraction (PAGA) on control and cytarabine drug (AraC) for Acute Myeloid Leukemia (AML) single cell RNAseq.
- Annotate clusters' cell types based on marker genes from Wilcoxon test.
- Build mapping networks between control clusters and AraC clusters: 1. VAE with Zero-Inflated Negative Binomial distribution approximation and 2. Contrastive learning
- Analyze expanded Connectivity Map LINCS 2020 transcriptional datasets level 5 using cmapPy module. (aim to perform AML drug design analysis)

Statistical Bioinformatics Research under Professor Jeff Xia

Jan 2019 – May 2019

McGill University

- Benchmark DIABLO, mixOmics, and OmicsPLS, and extend multi-omics integration.
- Assess the quality of Two-way Orthogonal Partial Least Square (O2PLS) and OnPLS.

- Develop and functionalize useful outputs of O2PLS and their interpretations on different types of omics such as proteomics, metabolomics, genomics, transcriptomics, etc.
- Develop user-interactive website for multi-omics integration analysis outputs. (O2PLS, Procrustes analysis, Multi-block partial least squares, Multi-block principal component analysis)

Neuroimaging Research under Professor Sylvain Baillet**Sep 2018 – Dec 2018***Montreal Neurological Institute and Hospital, McGill University**(Direct Supervisor: Philippe Albouy)*

- Data analysis for multimodal electrophysiology and imaging such as MEG and EEG combined with MRI.
- Develop automatic work-flow pipeline for analysis on Brainstorm software (running on Matlab). (i.e. what artifacts, noise, or filters to remove or use. What kinds of statistical tools such as entropy and power spectrum to apply for)
- Analysis on longitudinal study of the “short-term” effects of brain stimulation with steady state visual stimulation on auditory working memory performances in healthy volunteers.
- Conduct new experiment on “long term” effects of brain stimulation with Transcranial Magnetic Stimulation (TMS) on auditory working memory performances in healthy volunteers. (focused on measuring with Electroencephalography [EEG])

Conjoint Analysis Research under Professor Philip Stark**Feb 2018 – May 2018***University of California, Berkeley*

- Try to prove why conjoint analysis does not logically make sense in the market.

Research Intern under Professor Heather Haveman**Feb 2017 – Dec 2017***University of California, Berkeley**(Direct Supervisor: Jaren Haber)*

- Work for Charter Schools and the Business Age: Manual and CS Coding of Websites for Text Analysis, to answer the question: “Which charters survive and thrive in this political climate—those that stress discipline and college-readiness, or those that prioritize independent thinking and socio-emotional development?”
- Work with the Python/R coder teams to web-scrape and analyze the websites of every U.S. charter school open today with seasonal time series and machine learning techniques such as PCA and decision tree.
- Clean the large data sets of dat, csv, and txt files, into the public readable data

Research Intern under Professor Daniel Kammen**Sep 2016 – Dec 2016***Renewable and Appropriate Energy Laboratory at University of California, Berkeley**(Direct Supervisor: Sergio Castellanos Rodriguez)*

- Work for National Renewable Energy Deployment Research on SWITCH project on Mexico region.
- Web scrapping, data munging, and data visualization (using relational database PostgreSQL, Python, Pandas, QGIS) on 2006-2015 hydropower data and gaining exposure to national energy policy.
- Clean large datasets from various sources and format appropriately using non-parametric testing.
- Build up different statistical analyses (hypothesis testing) and analytical predictions (time series) for the appropriate future modeling of hydro-plant power generations in Mexico.
- Wrote a scientific research paper on methods of forecasting future hydro-power generations.

Acknowledgments

Haber, J.R. (2020). Sorting Schools: A Computational Analysis of Charter School Identities and Stratification. *Sociology of Education*. <https://doi.org/10.1177/0038040720953218>

Presentations and Posters

Albouy, P., Martinez-Moreno Z., **Kweon, Y.J.**, Zatorre, R.J., Baillet, S. (2018). Driving working memory with visual rhythmic stimulations. IDRC workshop. Montreal, Canada, Oct. 22 2018.

Albouy, P., **Kweon, Y.J.**, Whittaker, H., Baillet, S., Zatorre, R.J. (2018). Enhancing learning-related plasticity with information based neuromodulation. Auditory learning and plasticity symposium. Montreal, Canada, Oct. 23 2018.

Teaching and Advising

Stat 133 TA/UGSI (Gaston Sanchez)

Jan 2018 – May 2018

Statistics Department at University of California, Berkeley

- Lead 2-hour lab sections twice a week. (Taught 2 labs; thus, 4 hours in total)
- Hold 4-hour of office hours a week.
- Proctor, made, grade midterm and final exams.
- Topics taught including statistical visualizations, analysis, web browser user interface Shiny app, regular expressions, reproducible R package development, Linux, Unix, Git, etc.

Stat 135 Reader (Adam Lucas)

Aug 2017 – Dec 2017

Statistics Department at University of California, Berkeley

- Opportunity to connect with faculty and GSIs.
- Help grade quizzes, exams, and weekly homework.
- Have regular meeting with GSIs and a professor.

Stat 133 Lab Assistant (Adam Lucas, Gaston Sanchez)

Jan – May, Aug – Dec 2017

Statistics Department at University of California, Berkeley

- Opportunity to connect with faculty and GSIs.
- Help students do homework and lab assignments in lab hours.
- Tutor R language.
- Experience in helping to educate students on a fundamental statistics topic.
- Enhance critical thinking, communication, working in teams.
- Grade R lab assignments according to the professors' rubric.

Stat 198 Reader (Mike Leong)

Jan 2017 – May 2017

Statistics Department at University of California, Berkeley

- Help grade weekly quizzes and exams.
- Assist Professor Leong to organize the lectures.
- Mentor Stat 134 (Introduction to Probability) students to succeed in the class.

Haas Young Entrepreneurs at Haas (YEAH)/Boost Mentor

Sep 2015 – Dec 2016

Haas School of Business at University of California, Berkeley

- As a mentor, I lead “group 1” of five grade 9 students with another two Berkeley students. I share my experience and guide the younger students to help them achieve their goals.
- As a mentor, I lead a group of grade 11, making presentations with the topic of advocating the needs of education for students.

Math Lab Tutor

May 2015 – Jul 2016

Math Lab at Diablo Valley College

- Train students dropping in 1:1 or in groups for statistics, algebra, trigonometry, and calculus, 5 – 7 hours every week.

- Build great relationships with 200+ students, trying to encourage positive changes in them, in terms of math skills and habits.
- Help keep the math lab tidy and clean for students using the services there.

Business Lab Tutor**Sep 2015 – May 2016***Business/Accounting Lab at Diablo Valley College*

- Train students dropping in for managerial & financial accounting, statistics, and macro & micro economics, 3 – 6 hours every week.
- Troubleshoot business-related questions as an evaluator.
- Unlike the math lab tutor, I can also learn from tutees who come from different classes, since many professors do different but related projects for their classes.

University Service

Stat 133 Final Exam Proctor**Dec 15 2017***Department of Statistics, University of California, Berkeley***Disabled Students' Program (DSP) Note-taker****Jan 2017 – Aug 2017, Jan 2018 – May 2018***DSP office at University of California, Berkeley***Associated Students of University of California Finance Associate Director****Sep 2016 – Dec 2016***Administrative Department at University of California, Berkeley***Associated Students at Diablo Valley College (ASDVC)****Aug 2014 – May 2016***PR & Activity, Diversity, Legislative, College Success, Curriculum, Budget Committee at Diablo Valley College***Disability Support Services (DSS) Note-taker****Jan 2015 – May 2016***DSS office at Diablo Valley College*

Professional Service

Apple Map Quality Data Analyst**Jan 2022 – Dec 2022***Singapore Adecco Personnel Pte Ltd***Machine Learning Internship****May 2017 – Aug 2017***IPMD***CFO/Co-Founder****Nov 2012 – June 2017***Onbi, Smartphone Application Co***Marketing Internship****Oct 2014 – Jan 2015***Transamerica*

Community Involvements/Service

Soccer Assistant Coach**Jul 2015 – Oct 2015****Haiti Missionary****Aug 2015**

Honors and Awards

- High Distinction in general scholarship level at graduation, May 2018.
- Honors to date and Dean's Honors list for Fall 2017.
- Honors to date for Spring 2017.
- Academic Honors for Fall 2014 – Spring 2016.
- Diablo Valley College Alpha Gamma Sigma Honor Society Permanent Member, in Spring 2016.
- Associate Student at Diablo Valley College (ASDVC) Perfect Attendance Trophy, in Spring 2016.
- Earned the 1st place at Diablo Valley College for the contest of AMATYC, in Spring 2016.
- Award of Excellence: Diversity Committee (ASDVC), in Fall 2015.
- National Founding Contest 2nd Place for Onbi project, in Dec, 2014.
- Placed in the top 7.3% in the Euclid contest, run by Waterloo University, in 2014.
- Placed in the top 15 candidates in my district, qualifying to go to Penn State for a national math contest, in 2014.

Grants and Scholarships

- Korean Canadian Scholarship Foundation (KCSF) Galleria Supermarket Scholarship, \$2,500 (Mar 2019; awarded in May 2019)
- McGill Quantitative Life Science Department Stipend, \$20,000 CAD (Sept 2018 – Aug 2019)
- Berkeley International Office Grant/Scholarship, \$3,283 USD (Spring 2018).
- Statistics Department Award/Grant, \$6,315 USD (Spring 2018).
- DVC Retiree's Association Transfer Scholarship, \$1,000 USD (Spring 2016).
- DVC Math Department AMATYC contest winner scholarship, \$150 USD (Spring 2016).

Skills and Languages

- Proficient in R.
- Intermediate in Python, SQL, and Latex.
- Familiar with MATLAB, Java, CSS, HTML, C++, Linux, Git, and Mathematica.
- Fluent in Korean and English. Studied Japanese, Chinese and French (Creole).
- Proficiency in Windows, Microsoft Office (Word, Excel, and PowerPoint).
- Familiar with Photoshop.

Referees

- **Jun Ding, Assistant Professor**

Department of Medicine

McGill University

jun.ding@mcgill.ca

- **Sylvain Baillet, Professor**

Department of Neurology and Neurosurgery

Department of Biomedical Engineering

Department of Computer Engineering

McGill University

sylvain.baillet@mcgill.ca

- **Gaston Sanchez, Lecturer**

Department of Statistics

University of California, Berkeley

gasigiri@berkeley.edu

Social Media

- **Website**

<https://yjkweon24.wixsite.com/yongjinkweon>

<https://yjkweon24.github.io/>

- **Github Projects**

<https://github.com/yjkweon24/Jin-Projects-Show-up>

- **LinkedIn (For more non-academic achievements, I would suggest to check out my LinkedIn)**

<https://www.linkedin.com/in/jin-kweon-5b687a103>