Kuan-Hung (Peter) Yeh

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(707)727-5012 | ✉ **khyeh0816@g.ucla.edu** | ***Los Angeles, CA***

peterntuph.github.io | **kuan-hung yeh** | **Google Scholar**

HEALTH DATA SCIENTIST

Quantitative Researcher in biomedical science passionate in molecular diagnostics industry for cancers. **4+** years of hands-on research experience collaborating with experts in Biotech, National labs, Universities, and Hospitals. Turning data into actionable insights to transform Cancer Care & revolutionize Public Health.

Programming Languages & Toolkits: R (Markdown, Shiny), Python, Linux, SQL, Git/GitHub, SAS

Research Topics: Statistical Genetics, Precision Medicine, Machine Learning, Survival Analysis

EDUCATION

University of California, San Diego (UCSD) *San Diego, CA*
Ph.D. in Bioinformatics and Systems Biology (BISB) *Sep . 2023*

University of California, Los Angeles (UCLA) *Los Angeles, CA*
Master of Science in Biostatistics (Up-to-date GPA: 3.93/4.0) *Jun. 2023 (Expected)*

- **Selected Courses**: Mathematical Statistics, Data Science, ML in Bioinfo

National Taiwan University (NTU) *Taipei, Taiwan*
Bachelor of Science in Public Health (Overall GPA: 3.75/4.0) *Jun. 2020*

- **Honor Graduate** w/ Elite Scholarship & Dr. KP Chen Memorial Scholarship
- **Selected Courses**: Linear Algebra, Survival Analysis, Computational Biology, Epidemiology

RESEARCH EXPERIENCES

Department of Medicine Statistics Core (DOMStat), UCLA *Los Angeles, CA*
Graduate Consultant Intern, Advisor: Prof. Chi-Hong Tseng *Dec. 2022 – **Present***

- Generated statistical outputs to support a **three-arm randomized controlled trial**.
- Conducting **Mediation Analysis** to prove that intrinsic motivation explains the underlying mechanism of the relationship between interventions and health behavior for weight-loss *[Report]*.

Department of Computational Medicine, UCLA *Los Angeles, CA*
Graduate Student Researcher, Advisor: Prof. Bogdan Pasaniuc *May. 2022 – **Present***

- Demonstrating genetic architecture impacts parameter estimation in Cox model and PGS-based risk stratification.
- Developed **survival data simulation pipeline** based on different hazard assumption

Foundation Medicine, Inc. (Affiliate of Roche Group) *Boston, MA*
Biostatistician Intern, Advisor: Dr. Chang Xu *Jun. 2022 – Sep. 2022*

- Designed new criteria for reproducibility in **diagnostic assay precision study** to increase statistical power by 90% while controlling type I error *[Shiny App]*
- Proposed Quality Assurance protocol based on new reagent design in **FoundationOne® Liquid CDx** (F1LCDx)
- Implemented and verified the performance metrics for new PicoGreen dsDNA Quantification reagent (TMV).

Biostatistics & Bioinformatics Core lab, NTU *Taipei, Taiwan*
Undergraduate Researcher, Advisor: Prof. Tzu-Pin Lu *Jun. 2019 – Feb. 2020*

- Constructed the **First Prognostic Model** for Asian Colon Cancer Patients *[ASO '21]*
- Reported the prognostic difference across different ancestry and customized a Cox model in asian population
- Provided a robust overall **survival/risk prediction** to facilitate clinical shared decision making *[Web]*
  - **Best Research Poster Award** in Research Symposium, NTUPH *[Poster]*

PUBLICATIONS & PRESENTATIONS

1. Han-Ching Chan, Chi-Cheng Huang, Ching-Chieh Huang, Amrita Chattopadhyay, **Kuan-Hung Yeh**, Wen-Chung Lee, Chun-Ju Chiang, Skye Hung-Chun Cheng, Tzu-Pin Lu, (2021) "Predicting Colon Cancer-Specific Survival for the Asian Population Using National Cancer Registry Data from Taiwan". *Annals of Surgical Oncology* 29:853–863
2. **Kuan-Hung Yeh**, Ching-Heng Lin, Tzu-Hung Hsiao and Tzu-Pin Lu, "Genome-Wide Association Study (GWAS) on Metabolic Syndrome in Subjects with Abdominal Obesity in a Taiwanese Population" *Oral presentation at 2020 IEEE International Conference on Bioinformatics and Biomedicine (2020 IEEE BIBM).*

3. **Kuan-Hung Yeh**, Tzu-Pin Lu, "Using National Cancer Registry Data to Develop Prediction Model for Colon Cancer in Taiwan" *Poster presentation at 2019 Taiwan Public Health Joint Annual Conference.*

SELECTED PROJECTS

2022 Machine Learning in Bioinformatics @UCLA *[Link]* *Los Angeles, CA*
Predicting 30-day mortality for ICU Patients using the MIMIC IV dataset *Dec. 2022*

- Conducted **missing data imputation** by Multiple Imputation by Chained Equations (MICE)
- Compared five **supervised learning** methods on predicting 30-day mortality in ICU Patients
- Developed an outperformed XGBoost Model with **0.72** AUC, **0.69** AUPRC and **92%** accuracy

2019 Taichung Veteran General Hospital *Taichung, Taiwan*
Genome-Wide Association Study (GWAS) on Metabolic Syndrome *Sep. 2019*

- Found **Novel Genetics Locus** on metabolic syndrome from genome-wide association study (GWAS)
- Analyzed and combined phenotype and genotype data to quantify the risk of metabolic syndrome
  - **Published** and **Oral Presented** at 2020 IEEE BIBM *[Video]*

2018 TMU x MIT (Sana) HIOT Hackathon *Taipei, Taiwan*
1st Prize with $3,000 USD *[News Link]* *Oct. 2018*

- A Hackathon organized by **Taipei Medical University** and Computer Science and Artificial Intelligence Laboratory (CSAIL), **Massachusetts Institute of Technology**
- Proposed an Ultrasound Assisting System based on CNN for **Real-time auto examination of Internal Hemorrhage** in ICU with a **93**% accuracy rate

HONORS & AWARDS

Honor Graduate, Public Health Dept. at NTU *Jun '20*
Elite Scholarship, Elite-Well Education Foundation *Fall '19*
Dr. KP Chen Memorial Scholarship *Spring '19*

- Dr. KP Chen is the **Father of Public Health in Taiwan**, whose most well-known contribution is to clarify the causality between Blackfoot disease and Arsenicosis
- Dr. KP Chen Memorial Scholarship is one of the **Highest Award for Public Health Undergraduates in TAIWAN**

Innovation Award, Pharmacy School at NTU *Sep '18*
Dr. Jiang Jian Memorial Scholarship, Public Health Dept. at NTU *Fall '18*
Best Research Poster Award, NTUPH Annual Research Symposium *Fall '18*

PROFESSIONAL ASSOCIATIONS

American Society of Human Genetics (ASHG)
American Statistical Association (ASA)
Taiwan Public Health Association (TPHA)