Yi-Wen Hsiao

PhD student of Biostatistics at National Taiwan University.

I have been trained in bioinformatics, engineering and biotechnology, with both experimental and computational skills developed from extensive research experience.

My current research interests involve highly dimensional data analysis, text-mining technology, artificial intelligence/machine learning and their application in the biological field.

EDUCATION

2019 | present

Doctoral Student in Biostatistics

National Taiwan University - College of Public Health - Institute of Epidemiology and Preventive Medicine

Taipei, Taiwan

- **Attended Courses:** *Mathematical Statistics*, *Statistical Analysis for Repeated Measurements*, *Statistical and Machine Learning*
- **Proposed research project:** Identification of Genetic-based Prognostic Biomarkers via Next-generation Sequencing Data for Cancer Patients
- **Scholarship:** Taiwanese Excellent Doctor scholarship (2019-2023)
- **Advisor:** Dr Tzu-Pin Lu
- **Current GPA:** 4.00/4.30

2014 | 2015

Master in Biotechnology

Newcastle University - School of Natural and Environmental Sciences

Newcastle, United Kingdom

- Graduate Program in *Industrial and Commercial Biotechnology*
- **Grade:** Merit
- **Dissertation:**Ribosome engineering to improve antimicrobial production
- **Advisor:** Dr James Stach

2010 | 2013

Master in Chemical Engineering

National Chung Cheng University - College of Engineering

Chiayi, Taiwan

- **GPA:** 4.24/5.0
- **Dissertation:** The Differentiation of Domapinergic Neurons from Bone Marrow-Derived Mesenchymal Stem Cells Modified by DNA Target Methylation
- **Advisor:** Professor Wen-Chien Lee

2006 | 2010

Bachelor in Chemical engineering

National Chung Cheng University - College of Engineering

Chiayi, Taiwan

- **GPA:** 3.73/5.0

SUMMARY

Doctoral Student in Biostatistics at National Taiwan University (NTU)

Genomics enthusiast

NGS data analysis pipline constructor

Statistics/Data lover

SKILLS

R

Python

Linux

LANGUAGE

Mandarin: Native

English: IELTS (overall 7; 2019.08)

CONTACT INFO

y.w.hsiao9419

YWHSIAO9419

ywhsiao

ywhsiao.com

Google Scholar

ResearchGate

For further information, please contact me via email.

Last updated on 2021-04-03.

WORK EXPERIENCE

2016 | 2019

Research Assistant

Bioinformatics and Biostatistics Core Lab - Center of Genomic and Precision Medicine - National Taiwan University

Taipei, Taiwan

- Analyszed different types of microarray and sequencing data
- Built customized analytical pipelines and reports
- Literature reviews and academic writing

RESEARCH EXPERIENCE

2016 | 2019

Research Assistant (dry lab experience)

Bioinformatics and Biostatistics Core Lab - Center of Genomic and Precision Medicine - National Taiwan University

Taipei, Taiwan

- Conducted the reference-based mRNA-seq data analysis in terms of differential expression, variant discovery and fusion gene detection
- Also had experience in other types of RNA-seq data analysis, such as microRNA, lncRNA or circRNA
- Applied machine learning (ML) approach to predict cancer type using proteomic data
- Conducted an integrated analysis using both RNA-seq and ChIP/ATAC-seq data to understand the regulation mechanism in different T-cell types
- Identified germline or somatic mutations and CNV detection from whole-exome sequencing data using GATK3/4 pipeline for cancer research
- Integrated in-silico neoantigen prediction tools and HLA-typing software in cancer immunotherapy for customized vaccine design
- Utilized A5-miseq assembly pipeline to construct a single-strand viral genome for the discovery of point mutation after several generation
- Analyzed 16s rRNA/ITS amplicon sequencing data using QIIME1/2 pipeline to study microbial communities under different conditions

2014 | 2015

Masters Research (wet lab experience + dry lab experience)

Newcastle University - School of Natural and Environmental Sciences

Newcastle, United Kingdom

- Applied ribosome engineering approach to improve the production of antibiotic compounds in one of the novel marine bacteria
- Identified point mutation caused by antibiotic treatment using bioinformatics tool
- Evaluated antimicrobial activity and predicted the mode of action

2010 | 2013

Masters Research (wet lab experience)

National Chung Cheng University - College of Engineering

Chiayi, Taiwan

- Utilized molecular technologies, such as gel-based RT-PCR, real-time RT-PCR to evaluate whether the genes related to neural development were increased after neural induction in mesenchymal stem cell
- Used flow cytometry and western blot to detect the expression of neural proteins

ACADEMIC ARTICLES

2020 **Rare variants discovery by extensive whole-genome sequencing of the Han Chinese population in Taiwan: Applications to cardiovascular medicine**
Journal of Advanced Research. 2020.
• JMJ Juang, TP Lu, MW Su, CW Lin, JH Yang, HW Chu, CH Chen, **YW Hsiao**, CY Lee, LM Chiang, QY Yu, CK Hsiao, CYJ Chen, PE Wu, CH Pai, EY Chuang, CY Shen

2020 **A risk prediction model of gene signatures in ovarian cancer through bagging of GA-XGBoost models**
Journal of Advanced Research. 2020.
• **YW Hsiao***, CL Tao*, EY Chuang, TP Lu

2019 **Text-mining in cancer research may help identify effective treatments**
Translational Lung Cancer Research. 2019, S460-S463.
• **YW Hsiao**, TP Lu

2019 **RNASeqR: An R package for automated two-group RNA-Seq analysis workflow**
IEEE/ACM Transactions on Computational Biology and Bioinformatics. 2019
• KH Chao, **YW Hsiao**, YF Lee, CY Lee, LC Lai, MH Tsai, TP Lu, EY Chuang

2019 **Tumor-Infiltrating Leukocyte Composition and Prognostic Power in Hepatits B- and Hepatits C-related Hepatocellular Carcinomas**
Genes. 2019, 10(8), p.630.
• **YW Hsiao***, LT Chiu*, CH Chen, WL Shih, TP Lu

2019 **Using proteomic profiling to characterize protein signatures of different thymoma subtypes**
BMC Cancer. 2019, 19(1), pp.1-8.
• LC Lai, QL Sun, YA Chen, **YW Hsiao**, TP Lu, MH Tsai, L Zhu, EY Chuang, W Fang

2019 **Clinicopathologic Characterization of GREB1-rearranged Uterine Sarcomas With Variable Sex-Cord Differentiation**
The American journal of surgical pathology. 2019, 43(7), pp.928-942.
• CH Lee, YC Kao, WR Lee, **YW Hsiao**, TP Lu, CY Chu, YJ Lin, HY Huang, TH Hsieh, YR Liu, CW Liang

2018 **Dual immuno-renal targeting of 7-benzylidenenaltrexone alleviates lupus nephritis via Fc_RIIB and HO-1**
Journal of Molecular Medicine. 2018, 96(5), pp.413-425.
• TC Tseng, DY Huang, LC Lai, H Hwai, **YW Hsiao**, JR Jhou, EY Chuang, SJ Tzeng

2017 **A standardized herbal extract mitigates tumor inflammation and augments chemotherapy effect of docetaxel in prostate cancer**
Scientific Reports. 2017, 7(1), pp.15624.
• CH Tsai, SF Tzeng, SC Hsieh, YC Yang, **YW Hsiao**, MH Tsai, PW Hsiao

ORAL PRESENTATIONS

2019 **International Conference on Intelligent Biology and Medicine ICIBM 2019**

Ohio, United States

- **Topic:** The Comparisons of Prognostic Power and Expression Level of Tumor Infiltrating Leukocytes in Hepatitis B- and Hepatitis C-related Hepatocellular Carcinomas

2019 **Taiwan Public Health Association TPHA 2019**

Taipei, Taiwan

- **Topic:** A genomewide association study of Brugada Syndrome in Taiwan

SEMINAR PRESENTATIONS

2021 **2021 Spring Doctoral Seminar**

Taipei, Taiwan

- **Paper Title:**Pan-cancer landscape of homologous recombination deficiency Slides

2020 **2020 Spring Doctoral Seminar**

Taipei, Taiwan

- **Paper Title:**Comparison of pathway and gene-level models for cancer prognosis prediction Slides

2020 **2020 Fall Doctoral Seminar**

Taipei, Taiwan

- **Paper Title:** Development and Validation of the Gene Expression Predictor of High-grade Serous Ovarian Carcinoma Molecular SubTYPE (PrOTYPE) Slides

2019 **2019 Fall Doctoral Seminar**

Taipei, Taiwan

- **Paper Title:** Network-guided prediction of aromatase inhibitor response in breast cancer Slides

TEACHING ASSISTANT POSITIONS

2021 | present **Introduction and Application of Computational Biology Methods**

Taipei, Taiwan

- **Course instructor:** Dr Tzu-Pin Lu
- **Advisor:** Statistics Education Center, National Taiwan University
- **Duties:** reply to the questions from students, correct coding homework

2021 | present **Biostatistics and Epidemiology**

Taipei, Taiwan

- **Course instructor:** Dr Tzu-Pin Lu
- **Advisor:** Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University
- **Duties:** deliver online practical lectures, reply to the questions from students, correct papers

2020 **Applied Biostatistics (B)**

Taipei, Taiwan

- **Course instructor:** Professor Yu-Kang Tu

- **Advisor:** Statistics Education Center, National Taiwan University
- **Duties:** delivered practical lectures, replied to the questions from students, corrected papers

WORKSHOPS TAUGHT

2019

Advanced Statistic Analysis Workshop - RNA-seq data analysis

Taipei, Taiwan

- 2 hours with practice

WORKSHOPS ATTENDED

2019

Teaching Assistant Training Program for practical statistics

National Taiwan University - Statistics Education Center Taipei, Taiwan

- A 5-day workshop
- did a demonstration for statistics with R programming
- gained a teaching certificate

2019

Teaching Assistant Orientation

National Taiwan University - Center for Teaching and Learning Development

- A 4-hour online workshop