

Chun-Yuan (Tony) Huang

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

RESEARCH INTERESTS

Theory and Methodology: high-dimensional statistics, dynamical system, Bayesian statistics

Applications: human genetics, public health, cognitive psychology

EDUCATION

The University of Texas at Dallas, USA

May 2023

Master of Science, Statistics (Data Science track)

National Cheng Kung University, Tainan, Taiwan

May 2018

Bachelor of Science, Statistics, Minor: Political Science

PUBLICATION

- Ahmad Z., Xing C., Khera A., **Huang C.Y.**, Brandt E.J., MacDougall D.E., Ahmed C.D., McGowan M.P., Wilemon K.A., Myers K.D. (2022+). *Using Healthcare Claims Data and Machine Learning to Identify Health Disparities for Individuals with Diagnosed and Undiagnosed Familial Hypercholesterolemia*. Under review in Journal of the American Heart Association.
- Huang C.Y.**, Yang C.T., and Fific M. (2018). *System Factorial Technology Provides New Insights on Hybrid Search*. In poster presented at 59th Psychonomic Society Annual Meeting.
- On-Going Project** *Network and Change-point Estimation on Single-Cell RNA Sequencing Pseudotime Trajectories*.

RESEARCH EXPERIENCE

McDermott Bioinformatics Lab, The University of Texas Southwestern Medical Center (UTSW), USA Dec. 2021 – Present

Research Intern at Laboratory of Dr. Chao Xing

- Performed projects in genomics and public health in UTSW as a collaborator and research on network inference for single-cell RNA sequencing (scRNA-seq) as the lead researcher and first author.
- Contributed to the project by performing statistical consulting, data wrangling in R and modeling using logistic regression to identify health disparities with Dr. Zahid Ahmad (UTSW) and Family Health Foundation.
- Inspired by real-world problems in estimating complex and dynamical structure in my past research experience and defined my research problem on estimating dynamical networks for scRNA-seq trajectories.
- Developed a time-varying graphical LASSO framework to perform network estimation based on inverse covariance; implemented parallel computing with C++ and R; Assessed function in a Linux bash environment.
- Provided statistics and high-performance computing (HPC) information support to the researchers in UTSW

Visual Cognition and Modeling Lab, National Cheng Kung University, Taiwan

Sep. 2016 – June 2018

Research student at Laboratory of Dr. Cheng-Ta Yang

- Performed research on human visual search in cognitive psychology as the lead researcher and first author.
- Constructed experimental program and executed the hybrid search experiment using eye-tracking software (Eyelink); recruited 55 participants and collected large eye movement datasets; cleaned response data using R.
- Implemented system factorial technology (SFT) and ANOVA to hybrid search reaction time data using R and MATLAB, analyzed the results, and wrote the hybrid search paper.
- Supported various lab duties including participant recruitment and scheduling and experiment assistance.

INDUSTRY EXPERIENCE

Crédit Agricole Corporate and Investment Bank, Taiwan

Dec. 2018 – Dec. 2020

Assistant Relationship Manager (Trainee), Financial Institutions Coverage & Debt Capital Market

- Produced statistical exhibits and slides for Taiwanese financial industry and international bond market trends research; prepared pre-meeting briefing materials for C-level client meetings.
- Developed and reviewed business strategies of Taiwanese financial institutions; assisted senior relationship manager in managing customer life cycle; facilitated various collateral agreements negotiations.

GfK Retail and Technology Ltd., Taiwan

Jan. 2018 – June 2018

Market Research Intern

- Responsible for reporting automation projects using R and VBA, decreasing data processing time by up to 25%.
- Designed store geographic distribution dashboard using Tableau to identify retail opportunities.

AWARD

- 2018 59th Psychonomic Society Graduate Conference Award (10% acceptance rate) \$ 1,000
- 2017 National Science Council of Taiwan Undergraduate Student Thesis Award \$ 1,000

VOLUNTARY EXPERIENCE

- Data for Social Goods, DSP Inc., Taiwan – *Data Analyst* July 2017 – Oct. 2017
- The Road to Rights International Organization, Sri Lanka – *International Volunteer* July 2015 – Sep. 2015

ADDITIONAL INFORMATION

Technical: R, C++, Python, Bash, SAS, MATLAB, SQL, Data Visualization (Tableau, R shiny)

Languages: Mandarin, English

REFERENCE

Dr. Chao Xing

Professor of Biomedical Engineering at the University of Texas Southwestern Medical Center

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Dr. Adwait Amod Sathe

Computational Biologist at the McDermott Bioinformatics Lab, University of Texas Southwestern Medical Center

Email: Adwait.Sathe@UTSouthwestern.edu

Dr. Cheng-Ta Yang

Dean, College of Humanity and Social Sciences, Taipei Medical University, Taipei, Taiwan

Distinguished Professor of Psychology at National Cheng Kung University, Tainan, Taiwan

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