

# 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 59<sup>th</sup> 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 59<sup>th</sup> 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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