Chih-Yu Chang

Ann Arbor, Michigan — cchihyu@umich.edu — (734) 450-6572 — Linkedin — Github

EDUCATION

Master Program in Applied Statistics — Michigan, U.S.A.
University of Michigan, Ann Arbor **(UMICH)** — Aug. 2023 - Expected Dec. 2024

- Current GPA: 3.9/4
- Statistics Courses: Regression Anal., Bayesian Data Anal., Prob. Theory, Statistical Theory
- IOE Courses: Continuous Optimization Method, Adv. Bayesian Data Science, Nonlinear Programming

Bachelor of Science in Applied Mathematics — Hsinchu, Taiwan
National Tsing Hua University **(NTHU)** — Sep. 2019 - Jun. 2023

- Mathematics Courses: Linear Algebra, Advanced Calculus, Numerical Analysis, Convex Optimization
- Computer Science Courses: Intro. to Programming, Algorithm Design and Analysis, Python Programming

Data Science Certificate — Hsinchu, Taiwan
National Tsing Hua University — Sep. 2021 - Jun. 2023

- Courses: Linear Model, Discrete Analysis, Stat. Computing, Stat. Learning, Statistics, and Probability

PUBLICATION

C. Y. Chang and M. C. Chang (2024) Deep Bootstrap Aggregation via Least Squares Estimation
Ready to Submit

- Developed a new aggregation method for regression problems in ensemble learning.
- Significantly improve the performance of random forest and bagging in real and simulated data.

C. Y. Chang (2024+) A Novel Combination Framework for Combining Classifiers
Ongoing

- Modeling aggregation procedure as a multi-nomial regression framework.
- Significantly improved the accuracy rate in both binary and multi-class problem.

C. Y. Chang and R. A. Kontar (2024+) Personalized Contextual Bayesian Optimization
Ongoing

- Developing a personalization framework for contextual Bayesian optimization with application to multi-client solar cell manufacturing.

WORK EXPERIENCES

Institute of Statistical Science, Academia Sinica — May. 2024 - Aug. 2024, Taipei, Taiwan
Visiting Scholar

Department of Industrial and Operations Engineering, UMICH — Michigan, U.S.A.
Research Assistant (Supervisor: Professor Raed Al Knotar) — Jan. 2024 - Now

- Applying functional data analysis and survival analysis tools to predict memory survival time.

Institute of Statistical Science, Academia Sinica — Taipei, Taiwan
Research Assistant (Supervisor: Dr. Ming-Chung Chang) — Mar. 2022 - Aug. 2023

- Studied data science, statistical learning related paper.
- Used R language to implement statistical learning model and improve its accuracy.

Department of Mathematics, NTHU — Hsinchu, Taiwan
Teaching Assistant — Sep. 2022 - Jul. 2023

- Became a Teaching Assistant of Calculus I and II offered to 140 international students.
- Held recitation class in English every week with an overall evaluation of 4.5/5 evaluated by students.

PROJECTS

An Investigation of Adaptive Stepsize Quasi-Newton Methods on ML Tasks — Apr. 2024
Adivsors: Professor Albert Berahas

- Developed three novel approaches to prevent overfitting when training ML using Quasi-Newton Methods.
- Responsible for developing methodologies and numerical simulation using Python.

- Successfully reduced the testing error in both regression and classification problems.

Analyzing and Forecasting Global Temperature Using Simulation and Smoothing Models Nov. 2023
Adivsors: Professor Naisyin Wang

- Cooperated with 4 classmates to analyze and model temperature data.
- Responsible for applying the Linear Mixed Effect Model with model testing and diagnostics.

R package: fussed lasso problem (adviser: Professor Nan-Jung Hsu) Feb. 2022
Project Link: `https://github.com/cchihyu/2-dim-fussed-lasso-regression`

- Implemented one and two-dimensional fussed lasso problems with the ADMM algorithm.
- Developed a function to reform the fussed lasso function in a more efficient way.

Equilibrium and Data-analytics Laboratory (adviser: Professor Yu-Ching Lee) Sep. 2021

- Compared different optimization algorithms used in solving online fish market problem using Python.
- Preformed numerical experiments with R to evaluate the performance in multiple measures.

AWARDS

- **Government Scholarship for Studying Abroad.** 2023-2025 Ministry of Education, Taiwan
- **Special Education Student Award Grant.** 2020, 2021, and 2022 NTHU, Taiwan
- **Adjunct Research Grant.** 2022-2023 Institute of Statistical Science, Academia Sinica

SKILLS

- Languages: English (fluent), Chinese (native)
- Programming: Python, R (Both are able to conduct research and perform data analysis)
- Tools: SQL, Power BI (entry-level)