

CHENG-HAN YANG

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WORK EXPERIENCE

Merck & Co., Inc.

Biostatistics Intern

Upper Gwynedd, PA

May 2024 - Aug 2024

- Developed Data-Covariate-Outcome (DCO) framework for external control data in oncology trials
- Enhanced survival time analysis, reducing trial duration and increasing statistical power
- Implemented Pocock criteria, propensity score matching by covariate balancing propensity score, and Bayesian dynamic borrowing

The University of Texas MD Anderson Cancer Center

Graduate Research Assistant

Houston, TX

Aug 2021 - Present

- Developed the Bayesian dose-finding design for I/II trials to determine the optimal dose that balances toxicity and efficacy outcomes.
- Employed the prognostic score to increase the power and decrease the mean square error.
- Evaluated the relationship between progression-free survival and overall survival in oncology studies.

National Tsing Hua University

Research Associate

Hsinchu, Taiwan

Aug 2018 - Jun 2021

- Developed the objective function for optimal treatment regime with survival outcome.
- Established a unified framework for ultra-high dimensional variable screening in a target population.

EDUCATION

University of Texas Health Science Center

Ph.D. Candidate, Biostatistics and Data Science

Houston, TX

Aug 2021 - present

- Expected Graduation: May 2025
- Academic Advisor: Thesis Advisor: Ruitao Lin

National Tsing Hua University

M.S., Statistics (GPA: 4.2/4.3)

Hsinchu, Taiwan

Aug 2015 - May 2017

- Dissertation: Regularized Interaction Boosting with Right Censored Data
- Advisor: Yu-Jen Cheng
- NTD 20,000 Merit Scholarship for ranking 2/26
- Academic Excellence Award in 2016 Fall, and 2017 Spring

National Tsing Hua University

B.S., Industrial Engineering and Engineering Management (IEEM)

Hsinchu, Taiwan

Aug 2011- May 2015

PUBLICATIONS

Cheng-Han Yang, Evan Kwiatkowski, J. Jack Lee, Ruitao Lin. REDOMA: Bayesian random-effects dose-optimization meta-analysis using spike-and-slab priors. *Statistics in Medicine*. 2024; <https://doi.org/10.1002/sim.10107>

Cheng-Han Yang, Yu-Jen Cheng. A model-free variable screening method for optimal treatment regimes with high-dimensional survival data. *Biometrika*. 2024; <https://doi.org/10.1093/biomet/asae022>

Cheng-Han Yang, Peter F. Thall, Ruitao Lin. DEMO: Dose Exploration, Monitoring, and Optimization Using a Biological Mediator for Clinical Outcomes. *arXiv preprint arXiv:2404.02120*.

Cheng-Han Yang, Guanghui Cheng, Ruitao Lin. On the relative conservativeness of Bayesian logistic

regression method in oncology dose-finding studies. *Pharmaceutical Statistics*. 2024; 1-10. doi:10.1002/pst.2364

In progress:

Cheng-Han Yang, and Ruitao Lin. MCP-ModX: Covariate-Adjusted Dose-Response Modeling for Phase II Dose Finding Studies Under Model Uncertainty.

Cheng-Han Yang, and Ruitao Lin. Bayesian Dose-Finding in Two Treatment Cycles Based on the Survival Endpoint, Efficacy, and Toxicity.

AWARD AND HONOR

Robert H. Bigelow Endowed Scholarship 2024

- Scholarship Award \$1,000.

North America Taiwanese Engineers' Association (NATEA) 2023

- Scholarship Award \$1,500.

Robert H. Bigelow Endowed Scholarship 2022

- Scholarship Award \$1,000.

NATIONAL COMPETITION

Kaoping Area Medical Emergency Response Alliance (KAMERA) April 2016
First place

- Worked with another teammate to win first place out of 500 teams.
- Successfully developed a zero-inflated model to predict the daily number of ER patients in hospitals across Pingtung in order to effectively distribute medical personnel and resources.
- Mined hospital data, clustered hospitals and identified significant categorical variables, and visualized this results.

Chinese Applied Statistic Association (CASA) August 2016
Second place

- Led a four-person team to win second place out of 1,000 teams.
- Estimated the customer life cycle via survival model to help managers make strategic marketing decisions and improve customer return rate.
- Developed an index based on membership and sales records to cluster the different type of customers.

VOLUNTEERING ACTIVITIES

Public Administration Substitute Services Jult 2017 - July 2018

- Established an automatic system to record how many hours per year the contingent workers do.
- Took routine administrative work.

Data for Social Good (D4SG) November 2016
<https://d4sg-solar.github.io/>

- Won a National Excellent Journalism Award.
- The objective is to track illegal manufacturing on agricultural lands.
- Published the resulting report in the Common Wealth Magazine in collaboration with journalists.

TECHNICAL STRENGTHS

**Programming
Languages**

R, Python, C++, Latex

Mandarin (native), English (working proficient)