Han Yuan

EDUCATION & ACADEMIC TRAINING

Duke-NUS Medical School, Singapore   Aug. 2020 – Jul. 2024
Ph.D. Degree in Biostatistics and Health Data Science   Advisor: Dr. Nan Liu
Duke University, Durham, United States   Jun. – Jul. 2023
Research Scholar, Department of Biostatistics and Bioinformatics   Advisor: Dr. Chuan Hong
University of Zurich, Zurich, Switzerland   Jan. – Jun. 2022
Research Scholar, Department of Quantitative Biomedicine   Advisor: Dr. Michael Krauthammer
Harvard University, Boston, United States   Jul. 2019 – Jan. 2020
Research Scholar, Departments of Epidemiology and Biostatistics   Advisor: Dr. Molin Wang
Nankai University, Tianjin, China   Sept. 2015 – Jun. 2019
Double B.S. Degrees in Biotechnology and Applied Mathematics   Ranking: 1st/79, GPA: 3.7/4.0

PUBLICATIONS & SOFTWARE   * Equal contribution

Yuan, H., ... & Zhao, G. (2023). Human-Guided Design to Explain Deep Learning-based Pneumothorax Classifier. Medical Imaging with Deep Learning, Short Paper Track.

Liu, M., ... Yuan, H. ... & Liu, N. (2023). Handling missing values in healthcare data: A systematic review of deep learning-based imputation techniques. Artificial Intelligence in Medicine.

Yuan, H.*, … & Wu, Y. (2023). An empirical study of the effect of background data size on the stability of SHapley Additive exPlanations for deep learning models. International Conference on Learning Representations, Tiny Paper Track.

Yuan, H., … & Xie, F. (2023). Interpretable Machine Learning-Based Risk Scoring with Individual and Ensemble Model Selection for Clinical Decision Making. International Conference on Learning Representations, Tiny Paper Track.

Kang, L., Yuan, H. & Zhu C. (2023). Error Analysis of Fitted Q-iteration with ReLU-activated Deep Neural Networks. International Conference on Learning Representations, Tiny Paper Track.

Xie, F., ... Yuan, H. ... & Liu, N. (2023). A universal AutoScore framework to develop interpretable scoring systems for predicting common types of clinical outcomes. STAR Protocols.

Yuan, H., ... & Liu, N. (2022). AutoScore-Imbalance: An interpretable machine learning tool for development of clinical scores with rare events data. Journal of Biomedical Informatics.

Xie, F., ... Yuan, H., ... & Chakraborty, B. (2022). AutoScore-Survival: Developing interpretable machine learning-based time-to-event scores with right-censored survival data. Journal of Biomedical Informatics.

Xie, F.*, Yuan, H.*, ... & Liu, N. (2021). Deep learning for temporal data representation in electronic health records: A systematic review of challenges and methodologies. Journal of Biomedical Informatics.

Miao, C., ... Yuan, H., ... & Wang, Z. (2021). TRIM37 orchestrates renal cell carcinoma progression via histone H2A ubiquitination-dependent manner. Journal of Experimental & Clinical Cancer Research.

Xie, F., ... Yuan, H., ... & Liu, N. (2021). Package 'AutoScore': An Interpretable Machine Learning-Based Automatic Clinical Score Generator. R Package.

Zhao, Y.*, Yuan, H.* & Wu, Y. (2021). Prediction of Adverse Drug Reaction using Machine Learning Based on an Imbalanced Electronic Medical Records Dataset. International Conference on Medical and Health Informatics, Full Paper Track.

Zhang, J. J., ... Yuan, H., & Wang, M. (2020). Alternatives to the Kaplan-Meier estimator of progression-free survival. The International Journal of Biostatistics.

Miao, C.*, ... Yuan, H.*, ... & Wang, Z. (2020). Effect of Enhanced Recovery After Surgery on Postoperative Recovery and Quality of Life in Patients Undergoing Laparoscopic Partial Nephrectomy. Frontiers in Oncology.

HONORS & AWARDS

The Runner-up of the 7th Annual Ph.D. Student Research Symposium, Duke-NUS Medical School   2022
Khoo Pre-Doctoral Fellowship, Duke-NUS Medical School   2020 & 2021 & 2022 & 2023
Merit Graduates (Top 5% Graduates), Nankai University   2019
The Third Prize of Undergraduate Scientific Research (Top 20% Groups), Tianjin Municipal Education Commission   2018
The First Prize of Excellent Undergraduate Scholarship (Top 5% Students), Nankai University   2016 & 2017
Merit Student (Top 10% Students), Nankai University   2016

CERTIFICATES   * Specialization: A series of related courses

Data Science Math Skills, Duke University, Cert.
Machine Learning, Duke University, Cert.

Clinical Decision Making using Deep Learning*, University of Glasgow, Cert.
Mathematics for Machine Learning*, Imperial College London, Cert.
Deep Learning with PyTorch, Coursera Project, Cert.1, Cert.2, Cert.3, Cert.4, Cert.5

EDITORIAL ACTIVITIES

Referee, Data Science Journal   Jul. 2023 – Present

PROFESSIONAL EXPERIENCE

Data Analyst Intern, Comprehensive Cancer Center Zurich, University Hospital Zurich   Jan. – Jun. 2022
- Developed several multi-modality models to facilitate medical diagnoses.

Data Analyst Intern, Channing Division of Network Medicine, Brigham Health   Aug. – Dec. 2019
- Compared and selected statistical models on different longitudinal datasets.
- Debugged algorithm and simplified time and space complexity of algorithm's code on R.

Data Analyst Intern, Division of Macroeconomic Research, Founder Securities   Aug. – Sept. 2017
- Conducted macro-economy analysis using records from Bloomberg and the National Bureau of Statistics.
- Finished 5+ drafts of macroeconomic research reports and 10+ industrial data reviews.

Finance Intern, Jiangsu Branch, Bank of China   Aug. – Sept. 2016
- Processed payments, issued invoices, staff claims, bank transfers & reconciliations.

EXTRACURRICULAR ACTIVITIES

President, Econ-China Association, Nankai University   Sept. 2016 – Jun. 2017
- Organized 15+ seminars on economics and invited 10+ professors, attracting 80% of club members.
- Maintained interactions with alumni and companies like CICC to find internships for club members.

Teaching Volunteer, Tianjin Yongji Primary School   Sept. 2015 – Jan. 2016
- Weekly guided 40+ pupils about math knowledge.