

Han Yuan

EDUCATION & ACADEMIC TRAINING

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| 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., Li, S., 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.[†], Liu, M.[†], ... & 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., Ning, Y., 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., Ning Y., 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., Sun, Z., Yuan, H., & Wang, M. (2020). [Alternatives to the Kaplan-Meier estimator of progression-free survival](#). The International Journal of Biostatistics.

Miao, C.[†], Yu, A.[†], 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.

EDITORIAL SERVICES

| | |
|--|------------------------|
| Referee, Expert Systems with Applications | Sept. 2023 – Present |
| Referee, Data Science Journal | Jul. 2023 – Present |
| Referee, Machine Learning for Health Symposium (ML4H 2023) | Sept. 2023 – Oct. 2023 |

HONORS & AWARDS

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| Pre-Doctoral Research Exchange Awards, Duke-NUS Medical School | 2023 |
| The Student Accommodation Awards, International Conference on Learning Representations | 2023 |
| 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 |

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

PROFESSIONAL EXPERIENCE

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| Data Analyst Intern, Comprehensive Cancer Center Zurich, University Hospital Zurich | Jan. – Jun. 2022 |
| <ul style="list-style-type: none"> Developed several multi-modality models to facilitate medical diagnoses. | |
| Data Analyst Intern, Channing Division of Network Medicine, Brigham Health | Aug. – Dec. 2019 |
| <ul style="list-style-type: none"> 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 |
| <ul style="list-style-type: none"> 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 |
| <ul style="list-style-type: none"> Processed payments, issued invoices, staff claims, bank transfers & reconciliations. | |

EXTRACURRICULAR ACTIVITIES

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| President, Econ-China Association, Nankai University | Sept. 2016 – Jun. 2017 |
| <ul style="list-style-type: none"> 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 |
| <ul style="list-style-type: none"> Weekly guided 40+ pupils about math knowledge. | |