Yichen He

E-mail: e0732876@u.nus.edu *Telephone number:* +65 89429892
Place of birth: Nanjing, Jiangsu, China *Date of birth:* 10-02-2000

Education

Ph.D's degree in Biostatistics and Modelling *National University of Singapore*
Year 1 *August 2024 - Now*

- Research Interests : Infectious disease dynamic modelling and cancer progression natural history modelling

Master's degree in Statistics and Data Science *National University of Singapore*
CAP: 4.5/5.0 *August 2022 - December 2023*

- Capstone research project: Distribution-Free Multisample Test Based on Optimal Matching with Applications to Feature Selection

Bachelor's degree in Mathematics *Soochow University, China*
GPA: 3.8/4.0 *September 2018 - July 2022*

- Bachelor's thesis: A Comparative Study of Image Recognition Algorithms based on Feature Extraction

Work experience

Research Assistant *April 2023 - August 2024*
Saw Swee Hock School of Public Health, National University of Singapore *Singapore*

- Disease modelling and Statistical analyses.
- Academic writing and publication of results.
- Preparation of meeting materials for stakeholders.

Research experiences

Hepatitis C Transmission and Progression Among PWID in Singapore: Modelling Treatment for Eradication *May 2024 - November 2024*
Research Assistant — Co-author

- Modeled Hepatitis C transmission among PWID in Singapore using Markov Chain Monte Carlo.
- Evaluated 37 strategies based on prevalence, deaths, and cured cases.

Demographic Epidemiological Modelling Of Singapore (DEMOS) *April 2023 - August 2024*
Research Assistant — Team Member

- Developed dynamic demographic modules (mortality, fertility, BMI) across age, gender, and race.
- Built a lung cancer incidence model using population screening data.
- Conducted statistical analysis to ensure model accuracy.
- Integrated socio-economic factors (housing, education) to assess disease susceptibility.

Distribution-Free Multisample Test Based on Optimal Matching with Applications to Feature Selection *February 2023 - June 2023*
Graduate Research Project — Team Leader

- Applied a graph-based distribution-free test using optimal matching and Mahalanobis distance to analyze sample similarity and structure.

- Integrated Graph-based Feature Selection (GFS) for hierarchical clustering and pivotal variable identification in high-dimensional data.
- Conducted experiments on high-dimensional datasets under general alternatives.

Examining the Dose–Response Relationship between Outdoor Jogging and Physical Health of Youths *June 2022*

Publication (Int. J. Environ. Res. Public Health 2022, 19(9), 5648; — Co-author)

- Analyzed physical health data of 2852 Chinese university students (2018–2019) using NSPHS standards.
- Used paired t-tests and regression models to assess jogging's impact on physical health.
- Identified key environmental factors influencing health and provided improvement recommendations.

Technical skills

Programming Languages	C, C++, Python, R, MATLAB, SQL
Tools	LaTeX, Markdown, Linux, Office, Obsidian

Language proficiencies

Chinese	Native
English	Fluent in communication and writing / IELT 7.0 / GRE 159+170+3.5