Jianyi Xu

+1 (484)-666-1327| Jixhaw@umich.edu | 1113 Nielsen Ct, MI, 48105

EDUCATION

University of Michigan Aug. 2024 – Now
M.S in Biostatistics

University of Pittsburgh Sept. 2020 - May 2024
B.S in Economics-Statistics

Relevant Coursework: Probability and Distribution Theory, Inference Methods, Generalized Linear Models, Survival Analysis, Machine Learning for Health Data, Causal Inference, Bayesian Methods, Design of Clinical Trials

INTERNSHIP EXPERIENCES

Artery Flow - *Analyst Intern* Hangzhou, China | *June-sept. 2024*

- Collaborated with **Zhongshan Hospital, Fudan University**, on a study involving **2,146 patients** to develop predictive models for Major Adverse Cardiovascular Events using AI-derived clinical indicators and a Bayesian approach, which I initiated and helped build; contributed to the results and inference sections of the ongoing manuscript.
- Collaborated with **Renji Hospital, Shanghai Jiao Tong University School of Medicine**, analyzing data from **471 patients** to compare AI-generated post-procedural Index of Microcirculatory Resistance with measured IMR for improving MACE prediction models; performed data analysis across lesion types, statistical testing, and assisted with manuscript preparation.
- Collaborated with **The Second Affiliated Hospital, Zhejiang University School of Medicine** on three studies:
  - Conducted research on **1,436 patients** to demonstrate the superior diagnostic performance of AI-derived IMR compared to traditional metrics like Corrected Thrombolysis in Myocardial Infarction Frame Count and Coronary Flow Reserve.
  - Carried out comparative analysis on **659 patients** to evaluate the predictive thresholds of IMR and Fractional Flow Reserve for MACE in patients with different vascular lesion types, and contributed to drafting the results and inference sections for the manuscript currently under review (*J Translational Internal Medicine*).
  - Analyzed medication utilization patterns in **146 rotational atherectomy cases** through an independent intraoperative comparative study.

Medtronic - *Analyst Intern* Shanghai, China | *July. –Sept. 2023*

- Processed and visualized clinical data collected from partner hospitals using Python; built linear regression and ARIMA models to assess Solitaire stent efficacy and forecast hemorrhagic stroke trends.
- Created a presentation deck summarizing key insights and delivered it to the Clinical Affairs team to support product evaluation and future treatment planning.

Wallaby Medical - *Analyst Intern* Shanghai, China | *July-Aug. 2022*

- Collected and analyzed data from over **20 hospitals** on the intraoperative usage rate of embolization coils, comparing Wallaby's products with major domestic brands in terms of procedure frequency, average coils per surgery, and physician preferences.
- Examined sales volume across provinces alongside hospital penetration, procurement records, and distributor performance; presented findings to the marketing department, which informed regional pricing and product positioning strategies.

PUBLICATIONS

- Liu Y, Hu Y, Zhang J, **Xu J**, Dong L, Jiang J, et al. *Integrated prognostic assessment of stable, unstable coronary artery disease and non-ST elevation myocardial infarction with angiography-derived index of microcirculatory resistance and fractional flow reserve.* J Transl Int Med. (Under Review).

HIGHLIGHTED PROJECTS

Automated Retinal Vessel Segmentation using U-Net - *Core Member* *Oct.-Dec 2024*

- Developed an automated retinal vessel segmentation system using a U-Net model integrated with a ResNet-34 encoder, optimized by a combined Dice and BCE loss function.
- Conducted literature review, managed data collection, preprocessing, and achieved effective segmentation with a Mean Dice Score of **0.3680** and Mean IoU Score of **0.2458**, identifying opportunities for further enhancement.

Relationship Between HDL Cholesterol and BMI in US Adults - *Core Member* *Sept.-Dec 2024*

- Conducted regression analysis on NHANES data **(n=2,145)**, adjusted and finalized models, and authored results highlighting BMI's significant negative correlation with HDL cholesterol (**~30%** variability explained).

Efficacy Analysis of Stent-Assisted Embolization in Ruptured Aneurysms - *Research Assistant* *Aug.-Dec. 2022*

- Analyzed baseline characteristics and outcomes in **207 patients** undergoing stent-assisted embolization at Tangshan Workers Hospital, adjusted and finalized multivariate logistic regression models identifying significant predictors, and evaluated prognostic accuracy using ROC analysis across five stent types.