Hong Xu

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EDUCATION

Minzu University of China **Sep. 2023 – Jun. 2025**
School of Science, Master of Applied Statistics. GPA: 3.79/4 *Beijing, China*

Nanjing University of Finance and Economics **Sep. 2019 – Jun. 2023**
School of Applied Mathematics, Bachelor of Financial Mathematics. *Nanjing, China*

RESEARCH EXPERIENCE

Well-calibrated risk prediction model of binary outcomes with missing data **Jul.-Oct.2023**

- Assisted in establishing predictive models, addressing discordance between target and source populations in breast cancer risk models by proposing a constrained calibration model using two-phase data.
- Performed numerical simulations to gauge the model's robustness with varied distributions in two-phase data, exploring diverse scenarios to validate its excellence under varying conditions.

Two-phase sampling and analysis for predicting binary outcomes **Dec.23-Mar.2024**

- Utilized a semiparametric model to estimate the predicted risk and the AUC under the Two-phase data. The model evaluation was conducted through simulations based on various two-stage sampling methods, including case-control, simple random sampling, balanced sampling, and R-balanced sampling.

Association of TyG and TyG-related Indicators in Predicting OAB in Patients **May.-Aug.2024**

- Extracted overactive bladder-relevant indicators from the NHANES database and performed stratified group analysis to examine the association between Triglyceride-Glucose Index and OAB (Manuscript completed)

Survival analysis of adverse outcomes in STEMI patients based on TPS levels **Jul.-Aug.2024**

- Developed survival analysis and Cox multivariate regression,evaluated the role of TPS levels in risk stratification. Assessed the impact of these novel predictors by calculating the AUC, IDI,NRI within the Cox model.

Evaluating the added value of new predictors with the application in CVD Prevention **Dissertation**

- Evaluated the improvement in predictive models by incorporating novel risk factors.Demonstrated that evaluation metrics (IDI, NRI, AUC) are U-statistics with specific statistical properties.
- Developing semi-parametric statistical methods to compute AUC, IDI, and NRI in the missing data(Two phase data), updating the R package *"TwoPhaseAccuracy"* to include these methodologies.
- Yaqi C.*,**Xu H**. Development and evaluation of the updated risk prediction model involving in new candidate predictors(Manuscript completed)

PROFESSIONAL EXPERIENCE

Tsinghua University Vanke School of Public Health,Tang Lab **Apr.-Sept.2024**

- Intergenerational Impact of Intimate Partner Violence (IPV): Investigated the psychological and physiological impacts on children of mothers who experienced IPV, mapping out influence pathways.
- Exploring the discrimination faced by adolescence pregnant girls in SSA based on the DHS database, and the mediating effect of discrimination on adverse premature births and current health outcomes.

Health Inequality Among Middle-aged and Elderly People in China **Mar.-Jun.2024**

- Analyzed health policy documents using LDA model to identify policy focuses,employed XGBoost model and SHAP value to analyze the impact of various factors on health and select feature based CHARLS data
- Developed a latent variable for self-rated health, utilizing the CLMM, Laplace approximation, and empirical Bayes estimation to derive mean and variance estimates of health levels across provinces.

Clinical Intelligent Diagnostic Modeling for Hemorrhagic Stroke **Sep.-Oct.2023**

- Processed Big Data in EHRs using machine learning, applied Boruta algorithm to identify significant predictors for hematoma expansion and utilized the XGBoost regression model to forecast 90-day modified Rankin Scale (mRS) scores based on comprehensive feature sets.

PUBLICATION

- Yaqi C.*, **Xu H**, Two-phase Data Analysis Methods and Application[J]. *Journal of Minzu University of China(Natural Sciences Edition)* (Under Review).
- Jia L, **Xu H**, Xu X, et al. *GmMYB114 Facilitates the Synthesis of Anthocyanins in Soybean Sprouts under Blue Light*[J].*Plants*, 2024, 13(8): 1107.

TECHNICAL SKILLS

Languages: Mandarin(native), English(proficient), Cantonese(proficient)
Skills:R, Python, SQL, PS, ACCESS, Eviews, SPSS, Microsoft Office, LaTeX