YITING LU

luyt1020@gmail.com | +86 18758251241

EDUCATION

09/2020-06/2024 **Hangzhou Dianzi University** **Hangzhou, China**

Bachelor of Science in Statistics

- **Cumulative GPA:** *4.63/5*; *91.70/100*
- **Core Courses:** Stochastic Processes, Time Series Analysis, Nonparametric Statistics, Bayesian Statistics (*95/100*), Statistical Machine Learning (*100/100*)
- **Programming:** C, R, SQL, Python, MATLAB
- **Awards:** National Inspirational Scholarship(*top 1%*, nation-wide), Province Government Scholarship (*top 3%*, province-wide), Outstanding Student Leader of the University

08/2023-01/2024 **Kristianstad University** **Kristianstad, Sweden**

Exchange student in Computer Science

- **Core Courses:** Data Communication, Operating System, Computer Security

PUBLICATION

R Ye, B Fang, W Du, K Luo & **Y Lu**(2022) Bootstrap tests for the location parameter under the skew-normal population with unknown scale parameter and skewness parameter, *Mathematics*, https://doi.org/10.3390/math10060921

R Ye, W Du & **Y Lu** (2023) Bootstrap inference for unbalanced one-way classification model with skew-normal random effects, *Communications in Statistics - Simulation and Computation*, DOI: 10.1080/03610918.2023.2166533

R Ye, W Du & **Y Lu** (2023) Bootstrap inference for skew-normal unbalanced heteroscedastic one-way classification random effects model, *Journal of Statistical Computation and Simulation*, 93:15, 2672-2702, DOI: 10.1080/00949655.2023.2202400

RESEARCH EXPERIENCE

05/2023-Present **Predictive Recursion (PR) Algorithm for the Scale Mixture of Skew Normal Distributions** **Remote**

Research Intern

*Supervised by the Assistant **Prof. Schumacher Fernanda** from The Ohio State University*

- Investigated the differences between normal distribution and skew-normal ones and accommodated the existing algorithm to scale mixture of skew-normal distributions
- Conducted algorithm simulation in *R* with varying sample sizes and skewness values of skew-normal distributions
- Employed *Maximum Likelihood Estimation* to derive the *Q function* in *PR-EM* algorithm based on the characteristics of skew-normal distributions

01/2022-01/2023 **Bootstrap Inference for Unbalanced One Way Classification Model with Skew Normal Random Effects** **Hangzhou, China**

Core member

*Supervised by **Prof. Ye Rendao** from Hangzhou Dianzi University*

- Read through relevant literature and summed up in the *Introduction*
- Extended the model to the one-sided hypothesis testing and interval estimation problems of the unbalanced one-way classification one with skew-normal random effects
- Constructed the test statistics, and confidence intervals for the single variance component and sum of variance components
- Chose a real example of carbon fibers' strength and tested it

07/2022-08/2022 **Accurate detection of m^6A RNA modifications in native RNA sequences** **Hangzhou, China**

Research Intern

*Supervised by **Prof. Yang Jian** from Westlake University*

- Delved into the *genetics* field and contrasted *nanopore* and *Single-molecule Real-time Sequencing*
- Identified limitations of current models for current density measurement
- Selected an alternative approach using raw current intensities instead of typical features
- Explored *PCA* and *SVM* for detecting RNA methylation, focusing on specific regions of interest and achieving a prediction accuracy of *90%*
- Presented this method in a *journal club*

12/2021-03/2022 **Bootstrap Tests for the Location Parameter under the Skew-Normal Population with Unknown Scale Parameter and Skewness Parameter** **Hangzhou, China**

Core member *Supervised by **Prof. Ye Rendao** from Hangzhou Dianzi University*

- Ran the *Monte Carlo simulation* to estimate the *probability of type I error and power* of the Bootstrap test based on *Moment Estimation*
- Applied to the real data examples of leaf area index, carbon fibers' strength and red blood cell count in athletes to verify the reasonableness and effectiveness of the proposed approaches

CONTEST PROJECTS

12/2022-02/2023 **Light Pollution Risk Level (LPRL) Assessment Model** **Hangzhou, China**

Core member *Awarded **Honorable Mention** in COMAP's Interdisciplinary Contest in Modeling*

- Designed LPRL assessment model by selecting *5* first-level indicators (population, transportation, level of development, natural environment and night light) and *13* second-level indicators
- Collected the relevant data of *21* characteristic areas, and calculated the index weights comprehensively via *Entropy Weight Method* and *Analytic Network Process*
- Acquired their LPRL indexes by the *TOPISIS* method
- Established an intervention policy evaluation model based on *Dual-objective Programming*, taking Beijing and Leshan as Urban and Rural examples

03/2022-11/2022 **Increase Travel Willingness by Producing Targeted Promotion Videos** **Quzhou, China**

Group Leader *Won the **2rd Prize** in Zhejiang Province Statistical Social Survey Competition*

- Analyzed the preferences of *453* tourists with statistical method (*contingency table analysis, clustering analysis, factor analysis*) and machine learning algorithm (*random forest, boosting)* by *Python*
- Got consistent results on the relationship between video platform & components and travel willingness
- Assumed this relationship fit the *Stimulus-Organism-Response* model and confirmed its *reliability* and *validity* by the *Structural Equation Model*
- Implemented in *3* trial rural destinations and promoted rural tourism development

11/2021-12/2021 **Probability of Air Transmission in Confined Spaces Access Model** **Hangzhou, China**

Group Leader *Awarded **Honorable Mention** in Authority Cup Mathematical Contest in Modeling*

- Discovered that the existing model (*Wells-Riley* and *Rudnick* models) didn't include sufficient factors
- Developed a hybrid model to estimate the infection rate in a given space, by embedding the *Wells-Riley* model into the *CFD* and incorporating *5* comprehensive variables by *MATLAB*
- Verified the model by comparing the estimated infection rates in an airplane cabin and an indoor stadium, suggesting that larger spaces with sparse crowds and good airflow conditions had significantly lower (*35%*) infection rates

10/2021-11/2021 **Case Study on Forest Ecological Banks** **Hangzhou, China**

Core member *Won the **1st Prize** in Zhejiang Province Finance and Innovation Competition*

- Focused on the forest ecological banks to sustainably converse ecological resource value
- Sought a method to convert ecological resources from the forest ecology bank into ecological assets, ultimately becoming an ecological capital
- Used *Nanping Forest Ecological Bank* as an example, calculated its economic, ecological and social values increase and validated it via *Differences in Differences* method

INTERNSHIP EXPERIENCE

07/2021-10/2021 **Strategies to Protect Rights of Romanian Women and Children** **Remote**

Marketing Intern *Supervised by director **Lavinia Fratila** of Policy Center for Roma and Minorities*

- Got involved in *The Alternative Education Club* to positively impact *500+* disadvantaged children in Bucharest via arts and sports, aiming to improving school motivation and increasing their self-esteem
- Created a step-by-step personal branding strategy, including targeting the audience, planning, evaluation of image and communication effectiveness, and strengthening brand reputation

ADDITIONAL INFORMATION

Language: Chinese (native), English (advanced), and French (beginner)

Other Skills: Editing (After Effects / Photoshop), HTML, Networking (Wireshark)

Voluntary: Volunteer for 20th Asian Games (Tennis), Volunteer for mountain marathon, Aid Education in Lishui

Hobbies Reading, watching movies, skateboarding and hiking