Junjie Ma

Toronto, CA | junjie.ma@mail.utoronto.ca | +1-(437)-985-8755

EDUCATION

University of Toronto **Toronto, CA**
Master of Science in Statistics *Sept. 2024-Nov. 2025(Expected)*
University of Toronto Scarborough **Toronto, CA**
Honours Bachelor of Science in Statistics with high distinction *Sept. 2020-Jun. 2024*
Cumulative GPA: 84.64/100; Last Two Years GPA: 95.2/100
Relevant Courses: Multivariate Analysis(100); Probability and Stochastic Processes I&II(100&97); Categorical Data Analysis(100); Brownian Motion and Potential Theory(97); Differential Equations I&II(96&99); Statistics and Finance I&II (99&91); Regression Analysis(98); Statistical Inference(90); etc.

ACADEMIC EXPERIENCES

University of Toronto **Toronto, CA**
Independent Readings in Statistics (Advisor: Dr.Ting-Kam Leonard Wong) *Sept. 2023-Dec. 2023*
- Topic: Brownian motion and potential theory
  - Explored and summarized crucial topics in Brownian motion, including Lévy's construction, Strong Markov property, transience, regularity and cone condition, harmonic functions and martingales, etc.
  - Reviewed probabilistic approaches in classical potential theory; applied Brownian motion to represent harmonic functions, to solve the Dirichlet and Poisson problem, and to construct the equilibrium measure.
  - Link to the Final Report.

Research Assistant (Advisor: Dr.So-hee Kang) *May. 2023-Aug. 2023*
- Project: Estimating unknown diagnostic sensitivity and specificity under the Bayesian hierarchical model
  - Cleaned and visualized 90,000+ raw data; investigated relationships between 15 rats' performance in detecting Tuberculosis and other factors using logistic regression models.
  - Utilized k-means clustering to group rats with similar features; proposed Bayesian hierarchical models and Bayesian latent models on building the optimal rats' team and performed sensitivity analysis on potential priors and hyperpriors.
  - Coded the model in Stan and simulated the posterior distribution under the Markov chain Monte Carlo methods, conducted posterior inference to exclude unqualified teams.
  - Presented results and findings at the UTSC CMS research seminar.

Independent Readings in Statistics (Advisor: Dr.Shahriar Shams) *May. 2023-Aug. 2023*
- Topic: Survival analysis
  - Estimated the Kaplan-Meier(K-M) survival curve for Malignant Melanoma patients and conducted stratified Log-rank tests to compare the survival curves in different groups.
  - Fitted Cox proportional hazards models and performed the model selection; assessed model assumptions using Schoenfeld-residual tests and visualized log-log survival functions.
  - Analyzed the survivor probability under parametric models, including log-logistic, Weibull, log-normal, Gompertz, etc.; interpreted the model under the accelerated failure time(AFT) assumption.
  - Presented the project at the UTSC CMS research symposium. Link to the Poster.

PROFESSIONAL EXPERIENCES

University of Toronto **Toronto, CA**
Teaching Assistant (STAC53, STAC51, STAB57, STAB22) *Sept. 2023-Apr. 2024*
- Assisted in teaching junior-level statistics courses covering logistic regression, Poisson regression, likelihood and Bayesian inference, applied data collection, and statistical coding.
- Held office hours and monitored online Q&A platforms to provide academic assistance to approximately 280 students.
- Organized weekly tutorial sessions to discuss lecture materials with approximately 35 students; demonstrated statistical coding and data analysis techniques using `R`.

KUKA GROUP **Hangzhou, CN**
Strategy Intern *Jan. 2021-Jul. 2021*

- Conducted market research and customer analysis for shared massage chairs; utilized Excel to assess passenger flow data from over 100 locations.
- Evaluated market saturation using Excel-based models and simulated industry competitions.
- Accomplished feasibility analysis and offered strategically valuable recommendations and ideas.

SKILLS

- **Coding:** Python(proficient), R(proficient), LaTeX(proficient), Excel(proficient), C(familiar), Java(familiar), MATLAB(familiar).
- **Language:** Chinese(native), English(fluent).