Yueming (Christine) Shen

Last update: Jan 25, 2026

Email : yueming.shen@duke.edu
Website: https://christineymshen.github.io

EDUCATION

Duke University Durham, US
PhD in Statistical Science; Advisor: Surya Tokdar *Expected Sep 2026*
Master of Statistical Science; Advisors: Peter Hoff, Alexander Volfovsky *Aug 2019 – May 2021*
- Thesis: Comparison of Bayesian inference methods for probit network models

The Chinese University of Hong Kong Hong Kong, China
Bachelor of Business Administration with Honors *Sep 2007 – Jul 2011*
- Major: Insurance, Financial and Actuarial Analysis; Minor: Statistics, German

University of Toronto Toronto, Canada
International Exchange Student in Actuarial Science *Sep 2009 – Dec 2009*

PRESENTATION

A Bayesian competing risks model with spatially varying coefficients for readmission risk in elderly patients with upper extremity fractures
- Contributed talk, 2025 Joint Statistical Meetings Aug 2025

Bayesian model evaluation using p-values
- Poster session, 2024 ISBA World Meeting Jul 2024
- Poster session, 2024 The Bayesian Young Statisticians Meeting Jun 2024

PUBLICATION

Preprints and working papers

[1] Shen, Y., C. Pean, D. Dunson, and S. Berchuck (2025). "Discovering spatial patterns of readmission risk using a Bayesian competing risks model with spatially varying coefficients". Under review at the Journal of the American Statistical Association. arXiv: 2511.20616.

[2] Shen, Y. and S. Tokdar (2026a). "Asymptotic well-calibrated Bayesian p-value using the Kolmogorov-Smirnov statistic". Submitted to the Annals of Statitics. arXiv: 2504.14077.

[3] — (2026b). "Bayesian model evaluation with p-values". Working paper.

Journal

[4] Kahan, R., C. Shen, P. Wellborn, A. Lauder, S. Berchuck, H. Javeed, C. Pean, and A. Federer (Jan. 2026). "Artificial Intelligence in Triaging Patient Questions: An Evaluation of a Large Language Model for Distal Radius Fractures". In: *Journal of the American Academy of Orthopaedic Surgeons* 34.1, e106–e115. DOI: 10.5435/JAAOS-D-25-00456.

AWARDS AND QUALIFICATIONS

- ASA-SBSS Student Paper Award 2026
- ISBA World Meeting Best Poster Award 2024
- Duke Statistical Science Department PhD Student BEST Award 2023 – 2024
- Duke Statistical Science Department PhD Student TA of the Year Award 2022 – 2023
- Duke Statistical Science Department Master Student TA of the Year Award 2020 – 2021
- Duke Graduate School Dean's Research Award Oct 2020
- Chartered Financial Analyst (CFA) May 2018 – May 2019
- Chartered Enterprise Risk Analyst (CERA) Jan 2015 – Dec 2021
- Fellow of the Society of Actuaries (FSA) Mar 2014 – Dec 2021
- CUHK Certificate of Academic Merit Jan 2009
- CUHK Mainland Student Full Admission Scholarship Jul 2007

RESEARCH EXPERIENCE

Duke University Durham, US
AI Health Fellowship *Jan 2024 – Present*
- Quantitative mentor: Samuel Berchuck, Assistant Professor of the Department of Biostatistics & Bioinformatics; Clinical mentor: Christian Pean, Assistant Professor of Orthopaedic Surgery

- Provided statistical and methodological support for orthopaedic clinical research projects in collaboration with practicing surgeons at Duke Hospital
- Designed and implemented statistical analyses for observational clinical data to study readmission risk of fractures patient, identify key risk factors and underlying spatial patterns
- Communicated statistical findings to clinical collaborators and translated methodological results into clinically interpretable conclusions

TEACHING EXPERIENCE

Duke University   Durham, US
Instructor
- Master's Virtual Math & Stat Bootcamp (Summer 2023)
  - Revamped lecture materials to adapt to the virtual format
  - Created over 20 pre-recorded videos on three learning modules: Linear algebra, Calculus, and Probability
- Master's Math & Stat Bootcamp (Summer 2022)
  - Taught five lectures (2–3 hours each) on Probability, Frequentist and Bayesian inference

Guest Lecturer
- STA 725 Bayesian Health Data Science (Spring 2025)
  - Instructor: Samuel Berchuck
  - Developed and delivered two lectures on Scalable Gaussian Processes [Lecture 1, Lecture 2].
- STA 440 Case Studies (Spring 2025)
  - Instructor: Fan Li
  - Delivered one lecture on web scraping.

Course Enhancement
- STA 602 Bayesian Statistical Modeling (Summer 2023)
  - Instructor: Li Ma
  - Developed two new labs to better align with lecture materials.
- STA 323 / 523 Statistical Computing (Spring 2020)
  - Instructor: Shawn Santo
  - Enhanced the efficiency and flexibility of an R Shiny leaderboard for a prediction competition assignment, by developing functionality to read in submissions, validate inputs, flag errors, compute scores, and visualize both current and historical team performance.

Teaching Assistant (TA)
- STA 602 Bayesian Statistical Modeling (Spring 2025, Fall 2020)
  - Instructors: Alex Fisher (Spring 2025), Li Ma (Fall 2020)
  - Master's level course with ~ 40 students. Led lab sessions and held office hours.
- STA 832 Multivariate Analysis (Fall 2023)
  - Instructor: Peter Hoff
  - PhD level course with ~ 20 students. Held office hours and graded assignments.
- STA 732 Statistical Inference (Spring 2023)
  - Instructor: Yuansi Chen
  - PhD level course with ~ 20 students. Held office hours and graded assignments.
- STA 199 Intro to Data Science (Fall 2022, Fall 2021) (**Head TA**)
  - Instructors: Elijah Meyer (Fall 2022), Alex Fisher (Fall 2021)
  - Undergraduate level course with ~ 150 students, 5 TAs (Fall 2022), and ~ 90 students, 12 TAs (Fall 2021)
  - Led lab sessions, held office hours, coordinated TA work assignment, facilitated communications between instructors and TAs, and handled ad-hoc administrative and student-related issues.
- STA 532 Theory of Statistical Inference (Spring 2021)
  - Instructor: Surya Tokdar
  - Master's level course with ~ 40 students. Held office hours and graded assignments.
- STA 360/ 602 Bayesian Statistical Modeling (Summer II 2020)
  - Instructor: Olanrewaju Michael Akande
  - Undergraduate and master's level course with 12 students. Led lab sessions, held office hours, and graded assignments.
- STA 230 Probability (Summer I 2020)
  - Instructor: Henry Kirveslahti

○ Undergraduate level course with ~ 40 students.

WORK EXPERIENCE

Ernst & Young Hong Kong, China
Manager in Actuarial and Insurance Advisory Services, Life Insurance Team *Oct 2017 – Aug 2019*
- Delivered actuarial advisory projects in HKRBC, Insurance Capital Standards and IFRS17
- Managed annual life insurance company actuarial audit projects under PRC GAAP and HKFRS basis

Eastspring Investments Hong Kong Hong Kong, China
Investment Analyst, Infrastructure Investment Team *Aug 2016 – Oct 2017*
- Executed infrastructure investment deals in private equity, private debt and fund investments
- Built financial models for a $500 million investment with the International Financial Corporation in emerging markets infrastructure projects, structured as a collateralized debt investment fund

Prudential Corporation Asia Hong Kong, China
Senior Analyst, Stochastic Modelling and Strategic Asset Allocation Team *Jul 2011 – Jul 2016*
- Signed-off economic assumptions and in-house stochastic simulation file production
- Developed derivatives and alternative assets modelling capacity
- Provided quantitative support on strategic asset allocation projects such as short-term vs long-term hedging, asset and liability duration matching
- Developed automation tools for simulation production which enhances calibration capacity from one single simulation file per week to over 800 simulation files overnight

Prudential Hong Kong Limited Hong Kong, China
Secondment, Participating Fund Management Team *Nov 2014 – Jun 2015*
- Delivered feasibility study on infrastructure assets investment for the participating business funds

Secondment, Actuarial Pricing Team *Nov 2013 – Jun 2014*
- Revamped and launched a Universal Life product

Prudential Corporation Asia Hong Kong, China
Intern, Stochastic Modelling and Strategic Asset Allocation Team *Jun 2010 – Dec 2010*