

# Kelly(Nuo) XU

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## EDUCATION

**Rutgers University–New Brunswick**, New Brunswick, NJ, USA

Sept. 2023-May 2026

**Bachelor of Science in Mathematics & Computer Science, Double Major (GPA: 3.97/4.0)**

- Honors & Awards: SAS Excellence Award, Alan Marc Schreiber Memorial Scholarship
- Coursework: Real Analysis (Honor), Multivariable Calculus, Differential Equations, Linear Optimization, Machine Learning Principles, Data Structures, Discrete Structures, Computer Architecture, Design and Analysis of Algorithms, Probability Theory, etc.

**Shanghai Jiao Tong University**, Shanghai, China

Aug. 2021-June 2023

**Bachelor of Science in Biotechnology Candidate, Honor Program (Excellent Student Scholarship: Top 25%)**

- Coursework: Calculus I&II, Linear Algebra, Probability and Statistics, University Physics I&II, C++, Analytical Chemistry, Engineering Practice, Eco-Tech innovation Experiment, etc.

## PUBLICATIONS

- Nuo, X., Xiang, Z., Yiwei, X., & Chengyu, Y. *Beauty is in the Eye of the Beholder: Uncovering Aesthetic Bias in Multimodal Perception and Generation*. Submitted to AAAI Conference on Artificial Intelligence (AAAI 2026). (Under Review)

## RESEARCH EXPERIENCE

**Stony Brook University -- Research Assistant**

**‘Research on Aesthetic Bias in Multimodal AI Systems’**

June-Aug. 2025

Dr. Chenyu You, Assistant Professor of Applied Mathematics & Statistics and Computer Science, Stony Brook University

- Conducted a comprehensive empirical study to uncover aesthetic biases in state-of-the-art multimodal AI models (e.g., GPT-4o, Gemini, Hunyuan).
- Designed and implemented a systematic benchmark to evaluate both perception bias (how models rank attractiveness in diverse human portraits) and generation bias (stylistic tendencies in model-generated portraits).
- Built a custom portrait dataset spanning various ethnicities, genders, and cultural aesthetics; applied pairwise comparisons and crowd-sourced evaluations to analyze bias.
- Revealed consistent Western-centric aesthetic preferences in mainstream AI models, highlighting the need for more culturally inclusive model training and evaluation.

**Rutgers University–New Brunswick -- Research Assistant, STEM research program (SUPER Research Symposium)**

**‘Differential Privacy in Applied Social Science Settings’**

June-Aug. 2024

Dr. Ruobin Gong, Associate Professor of Statistics, Rutgers University–New Brunswick

- Implemented and tested differential privacy synthetic data generators, including DataSynthesizer and PrivBayes, to compare their performance in replicating results from the Current Population Survey (CPS).
- Developed a systematic Python program that processes raw data files, replicates results from original studies, and calculates their confidence intervals, enhancing reproducibility and analysis efficiency.
- Analyzed the effect of privacy budget ( $\epsilon$ ) and model parameters on the quality of synthetic data, especially in complex queries such as the relationship between e-cigarette use and smoking cessation.
- Authored a research paper detailing the methodology and findings of the project, highlighting the application of differential privacy in social science. This work enhances understanding of secure data sharing and its implications for future research.
- Presented research findings in a poster at the SUPER Research Symposium, highlighting the application of differential privacy in social science and its potential for secure data sharing.

**‘Continuous Aggregated Accumulation Model of Recognition Judgments’**

Feb.-May 2024

Dr. Arnold Glass, Professor of Cognitive Psychology, Rutgers University–New Brunswick

- Explored various methodologies for calculating the area under reaction time curves in numerous images without explicit functions and parameters, focusing on optimizing data accuracy and workload efficiency.
- Evaluated project requirements to ensure precision and efficiency, leading to the decision to utilize ImageJ over coding for enhanced performance, and made a significant scientific contribution.
- Accomplished image preprocessing tasks, including precise threshold adjustments and edge detection, to achieve optimal data preparation for subsequent analysis.
- Established x and y axis scales, conducted area measurements, analyzed findings, and integrated variables into a database for comparative model evaluation.

**Shanghai Jiao Tong University -- Research Assistant**

**‘Machine learning-based analysis of single-cell sequencing data in cholangiocarcinoma’**

Mar.-June 2023

- Conducted extensive literature reviews in the field of cholangiocarcinoma, and analyzed various scholarly articles, reports, and studies to extract relevant data and identify key findings.
- Designed and implemented an unsupervised machine learning framework using Variational Autoencoder (VAE) to extract latent features from CT images.

- Preprocessed imaging data by resizing, normalizing, and converting them into numerical formats for model input.
- Applied Gaussian Mixture Model (GMM) clustering to identify structure in stage-related patterns and evaluated results using t-SNE visualization.

**‘Make the best use of Tea’-Research on pain points in tea production areas**

July-Sept.2022

- Conducted research through field visits and investigations to collect a large amount of data, to support the analysis and research on helping the tea industry, which has been seriously impacted by COVID-19.
- Collected data from 11 locations across 8 provinces, created a brief video promoting new products and marketing strategies to help local farmers boost their sales and won an ‘Excellent research program’ reward in the university.

## INTERNSHIP EXPERIENCE

**High Ridge Futures USA, Mclean,VA, USA**

June-Aug. 2023

***Quantitative Trading Intern (Remote, China)***

- Worked with CEO & Chief Investment Officer (CIO) to identify market signals, analyze and execute strategies, construct quantitative models, conduct statistical analysis, and build trading intuition.
- Developed simulation models and applied a variety of mathematical, econometric, and data science techniques to collect, process, and thoroughly analyze large-scale alternative data sets for insightful decision-making.

**Shanghai Linghe Asset Management LLP, Shanghai, China**

July-Aug. 2022

***Quantitative research Intern***

- Collaborated closely with senior team members and assisted the CIO in creating quantitative analyses and models to support optimizing the firm’s asset allocation strategy, enhancing investment decisions.
- Reviewed the research paper, and gained experience on various datasets including sourcing, cleaning, visualization, and supporting the predictive models.

## TEACHING EXPERIENCE & LEADERSHIP

**Rutgers University–New Brunswick -- *Math Tutor***

Sept. 2024-Present

- Provided face to face tutoring sessions in Math subjects and assisted undergraduate students in understanding complex mathematical concepts, improving problem-solving skills, and preparing for exams.
- Customized and tailored teaching methods to effectively accommodate individual learning styles, fostering a more engaging educational experience. This approach significantly boosted academic performance and enhanced overall student satisfaction.

**‘ZHIMEI’ Rural Education, Shanghai, China -- *Math Teacher***

Feb.-July 2022

- Devoted to tutoring a middle school student from Xinjiang, a rural province in China, resulting in a remarkable 20% improvement in the student's math score by the end of the semester.
- Adapted my teaching approach to better suit the needs of rural education and gained a deeper understanding of disparities in different regions of China and inspired me to become a more dedicated volunteer.

**Shanghai Jiao Tong University, Shanghai China -- *New Student Leader***

Aug.-Nov. 2021

- Supported 100+ new student registrations and orientation, managed distribution of materials and training sessions to lead a well-managed onboarding process, and set up a success-start for new students.
- Led and instructed a safety awareness class for new students to prepare them for their first home-away life in the university.

## SKILLS & INTERESTS

**Python for Everyone Specialization, University of Michigan**

May 2022

**Technical skills:** Python, C++, Java, Overleaf, ImageJ, MS office, Solid Works, MATLAB, Arduino IDE

**Language:** Chinese

**Other:** Piano level 10; Painting, Chess, Cycling, Tennis, Swimming, Travel