

# YALE QUAN

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## RESEARCH INTERESTS

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My research passion lies at the intersection of Applied Statistics, Psychometrics, and Education and is focused on issues of education inequality that exist in higher education, and the use of computer adaptive testing for high-stake assessments. My primary research interest focuses on the development and interpretation of multidimensional nonlinear latent variable modeling and their applications to Psychometric models. My secondary research interest focuses on the refinement and development of statistical models used to perform nonlinear multidimensional clustering in education data and how those clusters can be used in Item Response Theory models.

## EDUCATION

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**Ph.D., Measurement & Statistics, Educational Psychology**  
University of Washington, Seattle WA

*Expected 2025*

*Advisor:* Chun Wang Ph.D.

**M.S. Applied Statistics**

*December 2020*

California State University Long Beach, Long Beach CA

*Thesis Title:* A Multivariate Statistical Analysis of Major Change Patterns and Significant Factors That Influence Graduation Rates: A Case Study at California State University, Long Beach

*Advisor:* Sung Kim Ph.D.

**B.S. Criminal Justice**

*May 2013*

California State University Long Beach, Long Beach CA

## TEACHING EXPERIENCE

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**Teaching Assistant**, University of Washington, Seattle

*2021 -*

*Courses:* PSYCH 209 - Fundamentals of Psychological Research

Teach 2 section and lab courses with 25 undergraduate students per course. Students enrolled in this course are either applying into the psychology major or preparing to undertake research within the department. Course content covers psychological research methodology and techniques. Topics include the logic of hypothesis testing, experimental design, research strategies and techniques, fundamentals of scientific writing, search and evaluation of research literature in psychology, and ethical issues in psychological research.

**Lecturer**, California State University, Long Beach

*2020 - 2021*

*Department of Mathematics and Statistics*

*Course:* STAT 108 - Statistics for Everyday Life

Taught lecture and activity sections. Develop lesson plans and homework that encourage growth mindset. Help students develop study and note taking skills. Grade and write exams, and weekly quizzes. Collaborate with a team of lecturers and professors to update course material and discuss learning objectives.

*Course:* STAT 108 - Statistics for Everyday Life

Taught 5 activity sections with 30 undergraduate students per section. Students enrolled in this course were primarily pre-healthcare majors. Attended lecture 2 times per week and answered questions asked during lecture. Held 2hrs of office hours per week. Wrote weekly lesson plans and solutions for all STAT 108 large lectures. Lesson plans consisted of a combination of think-pair-share, modeling, individual, and group work.

*Course:* MATH 112B - Essential Algebra B

Taught 4-5 activity sections per semester with 25-30 undergraduate students per section. Students were primarily STEM majors. Attended lecture 2 times per week and answered questions asked during lecture. Held 2hrs of office hours per week. Developed lesson plans that connected the new Geometry material covered in activity to the Algebra covered in lecture. Lessons consisted of a combination of think-pair-share, modeling, individual, and group work.

*Course:* MATH 104/94 - The Power of Mathematics

Taught 4-5 activity sections per semester with 25-30 undergraduate students per section. Students enrolled in this course were non-STEM majors and came from a diverse population of majors. Held 2hrs of office hours per week. Developed lesson plans and weekly quizzes that reinforced material covered in lecture. Assisted with writing and grading exams. Lesson plans focused on think-pair-share, and group work.

**Mentor Supplemental Instructor**, California State University, Long Beach  
*Learning Assistance Center*

2017 - 2018

*Course:* MATH 115 - Business Calculus

Taught 1 supplemental instruction section. Wrote and implemented lesson plans that reinforced and extends material covered in lecture. Supervised a group of 5 mathematics supplemental instructors and held bi-weekly training's on content, classroom management, and teaching techniques. Held weekly office hours by appointment. Attend weekly lecture. Lesson primarily focused on group work.

*Course:* MATH 122 - Calculus I

Taught 1 supplemental instruction section. Wrote and implemented lesson plans that reinforced and extends material covered in lecture. Held weekly office hours by appointment. Attend weekly lecture. Lessons were primarily lecture focused with sparse group work.

## PROJECTS AND RESEARCH

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### **Master's Thesis**

Applied a combination of  $\chi^2$  hypothesis testing and correlation analysis to determine if students who changed majors graduate at a significantly different rate than students who did not. A multinomial logistic model was used to identify significant factors that influence a students time to graduation. Fishers Multi-population Linear Discriminate was used to develop a classification system which can be used to classify and predict a students time to graduation.

### **Detecting and Classifying Suspicious Yelp Reviews**

Analysis of the Yelp Dataset written reviews and star ratings using a combination of Tableau, Natural Language Processing (NLP), and Machine Learning.

### **An Analysis of Sugar Sources and their Effect on Blood Glucose Levels**

Designed and implemented a Repeated Measure ANOVA experiment for analyzing the effect of various sugar sources on blood glucose levels of four subjects.

## AWARDS AND ACADEMIC ACHIEVEMENTS

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Kenneth E. Lindgren Teaching Scholarship Recipient (\$4,500) 2019  
Faculty nominated award which recognizes excellence in teaching and a dedication to student success.  
Presented to one Graduate Teaching Associate per academic year.

Phi Kappa Phi Honor Society (Top Academic 10%) 2019

## PRESENTATIONS AND TALKS

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“A Multivariate Statistical Analysis of Major Change Patterns and Significant Factors That Influence Graduation Rates: A Case Study at California State University, Long Beach”, *Beyond the First Year*, California State University, Long Beach. November 2020

## TRAININGS ATTENDED

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National Center for Education Statistics  
Process Data Summer Training Series 2020

## TECHNICAL SKILLS

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<b>Programming Languages</b>	R (proficient), Python(proficient), SQL (competent) SAS (competent), Matlab (competent)
<b>Software &amp; Tools</b>	Microsoft Word (proficient), Excel (proficient), Powerpoint (proficient) L <sup>A</sup> T <sub>E</sub> X(proficient), Tableau (proficient)