

# Spencer Hilligoss

📍 Irvine, CA 📩 shilligo@uci.edu ☎ (+1) 704-776-1680 💬 LinkedIn 🌐 spencha

## Education

---

**University of California, Irvine** Sept 2023 – Present  
*PhD in Statistics (Expected)*

- Supervised by Dr. Annie Qu and Dr. Tianchen Qian
- GPA: 3.895/4.0
- **Coursework:** Statistical Methods, Machine Learning, Advanced Probability and Statistical Topics, Bayesian Statistics, Statistical Consulting

**University of North Carolina at Chapel Hill** Aug 2019 – May 2023  
*BS in Statistics and Operations Research, BA in Economics*

- GPA: 3.719/4.0
- **Coursework:** Stochastic Modeling, Dynamic Decision Making, Statistical Machine Learning, Financial Markets, International Economics, Advanced Microeconomic Theory, Macroeconomic Theory

## Research Interests

---

- Representation Learning
- Statistical Machine Learning
- Personalized Medicine
- Mobile Health
- Causal Inference and Mediation Analysis

## Fellowships and Awards

---

**T32 STEER in Biomedical Sciences Fellow** Aug 2025–Present  
*University of California, Irvine*

## Working Papers

---

**Hilligoss, S., Qu, A.** (2025+). “Autoencoder-Based Causal Mediation Analysis for High-Dimensional Time Series: Application to Postprandial Glycemic Response.” *Working Paper*.

**Hilligoss, S., Qu, A., Qian, T.** (In Preparation). “Tensor-Based Reinforcement Learning for Adaptive Insulin Dosing: A Personalized Treatment Recommendation Framework.” *Manuscript in Preparation*.

## Projects

---

### Predicting the Dow Jones Industrial Average with Sentiment-Enhanced LSTM Models

- Project demonstrating the efficacy of LSTM Models in enhancing prediction of stock indexes such as the DJIA.
- Tools Used: Python, R

### Hidden Markov Model for Part-of-Speech Tagging Tasks

- Literature Review and Application of Methods to Penn Treebank dataset for STATS 230: Statistical Computing Methods.
- Tools Used: Python, R

### Boom or Bust: Predicting the Success of NBA Players

- Built a predictive pipeline to forecast NBA success from NCAA statistics
- Benchmarked multiple statistical learning approaches with cross-validation and out-of-sample evaluation
- Tools Used: R

## Other Research Opportunities

---

**Harvard University, Opportunity Insights, Research and Policy Institute**

*Summer 2022*

*PREDOM Summer Program 2022:* Using Big Data to Solve Economic and Social Problems. Data analytics training course directed by economists Raj Chetty, John Friedman, and Nathaniel Hendren.

- Completed a Short Research Paper as a part of the PREDOM Summer Program 2022: **S Hilligoss**, “The Lasting Impact of HOLC Redlining on Minorities in New York”. (2022)
- Tools Used: R

## Teaching Experience

---

**University of California, Irvine**

*Teaching Assistant*

- Stats 67
- Stats 7
- Stats 295: Machine Learning and Data Science

*Fall 2023*

*Winter, Spring 2024*

*Winter 2025*

- Presented a lecture on Handling Data in R and Python, Web Scraping

## Computing Tools

---

**Languages:** R, Python, Stata, Microsoft Excel