

# Tyler Brown

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**Website:** <https://sites.google.com/view/tyler-j-brown/home>

**Github:** <https://github.com/tjb510/portfolio.github.io>

## EDUCATION

### **California Polytechnic University, San Luis Obispo, CA**

*M.S. in Quantitative Economics*

Graduating June 2025

- Immersed in coursework integrating econometrics and machine learning with critical thinking on empirical problems and incentives.
- Comprehensive curriculum in time series modeling using Python to compute, graph, solve, and analyze dynamic programs and Markov chains.
- Developed a strong foundation in time series forecasting techniques (AR/MA/ARIMA) and validation techniques, applying methodologies relevant to demand response, short-term load forecasting, and energy market analysis.
- Excelling in three class econometrics series, going in depth covering topics ranging from linear/quantile regression to demand estimation.

### **California Polytechnic University, San Luis Obispo, CA**

*B.S. in Economics, Minor in Statistics*

Graduated Cum Laude June 2023

- Concentrated in quantitative analysis, built a strong foundation in data analytics, statistical computing, and predictive modeling, with a focus on machine learning techniques such as classification, regression, regularization (ridge, lasso), and time-series forecasting.
- Conducted thesis project exploring the causal connection between obesity-related cancers and associated healthcare costs. Compiled data from multiple sources to create a unified dataset in R, performed literature review, and presented findings alongside limitations in formal presentation.

## ENERGY PROJECTS

### **Consultant - Quantum Energy**

SLO, CA. Jan 2025 - Current

- Developing a model to extrapolate TotalView impact analytics over a 30-year span, utilizing generation mode degradation rates for calculation of discount factors, providing a more accurate estimate of the lifelong financial and social benefits of large-scale renewable energy projects.
- Establishing the foundational framework to position Quantum as a certified provider of standardized renewable energy credit (REC) analysis, enabling buyers to clearly differentiate between high-value/high-impact projects and lower-quality alternatives.

### **Renewable Energy Transmission and Emissions Study Replication**

- Conducted a comprehensive replication of a seminal study on renewable energy and transmission congestion, analyzing over 43,000 hourly data points to assess the environmental impact of wind energy distribution and the inefficiencies of congested energy transmission and distribution.
- Employed advanced econometric techniques, including fixed effects regression models, successfully validating the original study's conclusion that congested transmission lines diminish pollution related benefit of wind generation by 24%.

## TECHNICAL SKILLS

- R/Rstudio (dplyr, Tidyverse), Python (Pandas, numpy), SQL, Tableau, Stata, Excel, Microsoft Suite, Google Suite.
- Proficiency in machine learning models, linear regression, binary classification methods, fixed and random effects models, as well as parametric and non-parametric models for robust data analysis and forecasting.

## EXPERIENCE

### **Conference Coordinator - Cal Poly Initiative for Climate Leadership and Resilience**

SLO, CA. Jan. 2024 - Current

- Played a key role in executing the 2025 Climate Solutions Now conference, contributing to the planning and delivery of five days of speakers and content across two tracks—Energy and Sustainability—for an audience of 2,000+ attendees.

### **Teaching Assistant/ Program Ambassador - California Polytechnic State University**

SLO, CA. Sept. 2024 - Current

- Provided weekly technical coding support in R for undergraduate econometrics classes, assisting students with using R for regression modeling.
- Held office hours for undergraduate students, providing support in fundamental microeconomic and macroeconomic principles for lower level classes, as well as advanced economic models for developing and evaluating environmental policies.
- Promptly graded and returned assignments and exams, ensuring accuracy, consistency, and timely feedback to support student learning.
- Serve as liaison between current MSQE students, alumni and prospective MSQE students, fostering engagement and program awareness.

### **Industry Analyst/ Shop Technician - The Backcountry**

Truckee, CA. Dec. 2023 – Aug. 2024

- Extracted and pre-processed five years of sales data for analysis and visualization, using R to assess the pandemic's impact on bike sales, service, and accessories, and collaborated with shop owners and managers to identify solutions for underperforming areas.
- Managed all aspects of bike repairs, from diagnosing issues to sourcing and installing the appropriate components.
- Enhanced shop efficiency by implementing Litespeed during the 2023 winter season to streamline ski service work order tracking.
- Performed high quality and advanced service on skis including mounts, remounts, full tunes, and skin trims for alpine, downhill, and telemark skis.

## VOLUNTEER EXPERIENCE

### **Course Instructor and Patroller – Tahoe Backcountry Ski Patrol (TBSP)**

Truckee, CA. Oct 2020 – Current

- CPR instructor responsible for conducting yearly training to recertify 60+ ski patrollers in CPR under the Red Cross emergency responder standards.
- Certified instructor in low-angle rope rescue, leading the ropes section in the annual NSP Certified TBSP mountain travel and rescue course.
- Oversee reimbursement approvals, maintain accurate financial records, and manage disbursements for the Patrol Board as Finance Officer.
- Initiated the transition to QuickBooks for centralized billing, payments, and accounting, streamlining the patrol's financial management.

