Tyler Brown

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INTENTION: A determined quantitative economist with strong analytical capabilities seeking to apply advanced econometric modeling and economic theory within the energy industry to solve complex market challenges through data-driven insights and collaborative problem-solving.

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.
- 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.
- Excelled 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, focusing on machine learning (ML) for classification, regression, regularization, time-series forecasting, and non-parametric techniques for robust analysis.
- 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.

Masters Thesis

- Conducting game theoretic analysis of California's Single-Clearing Price auction mechanism for electricity markets to identify potential market manipulation strategies and evaluate alternative auction designs for improved efficiency.
- Developing Python-based simulation models implementing genetic algorithms to identify optimal bidding strategies in energy markets, providing quantitative evidence for potential market manipulation under current auction structures.
- Established and maintained professional relationships with key energy market stakeholders (CAISO, LSE's), to enhance market analysis.

Renewable Energy Transmission and Emissions Study Replication

- Replicated a study on transmission congestion, confirming findings that congested lines diminish the pollution benefit of wind generation by 24%.

TECHNICAL SKILLS

- R/Rstudio (dplyr, Tidyverse), Python (Pandas, NumPy), SQL, Tableau (Desktop Specialist), Stata, Excel, Microsoft Suite, Google Suite.
- Proficiency in econometric and ML methods including regression models (OLS, GLS, LASSO), classification algorithms (logistic regression, decision trees, random forests), panel data analysis (fixed and random effects), and time series modeling (ARIMA).

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

- 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.
- Provided weekly technical coding support in R for undergraduate econometrics classes, assisting students with using R for regression modeling.
- 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, utilizing 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 and ski repair service, from diagnosing issues to sourcing and installing the appropriate components.

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.