

Tristan Misko

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Mission

What do we know? How do we know it? How do we deploy our knowledge in accordance with our values? I'm a data scientist and software engineer passionate about building systems within which data and technology can be used to help stakeholders answer questions like these to make better decisions.

Skills & Tools

Expert: Advanced use of R, Python, Excel, and Sheets for data manipulation, visualization, and analysis including:

- causal regression design
- regression discontinuity
- time series analysis
- instrumental variables
- model and feature selection
- unsupervised learning methods

Confident with: SotA Machine Learning techniques in R and Python to improve the accuracy of predictive models, including bias-variance analysis, cross-validation procedures, and feature extraction; geospatial data and ARCGIS; SQL and NoSQL database paradigms; Tableau; full-stack application engineering in Spring, Flask, and Node

Outstanding Domain Knowledge: Economics, finance, software engineering, and political science

Experience

Project Manager and Lead Analyst - Sustainable Shared Prosperity Index

Stipended - Institute for Research on Labor and Employment at UC Berkeley (Aug 2021 - Present)

- Led 12 undergraduate apprentices in the development and release of SSPI Version 3.0, training them in best practices for data collection, cleaning, feature design, and regression analysis using R and Google Sheets
- Led a full redesign of the SSPI database and data collection process through the implementation of a full stack web application using Flask, JavaScript, HTML, SQL, and MongoDB to automate data collection and validation processes, drastically improving data traceability and cutting manual data entry time by over 90%

Research Apprentice - Sustainable Shared Prosperity Index

Stipended - Institute for Research on Labor and Employment at UC Berkeley (Aug 2020 - Jul 2021)

- Developed and implemented quantitative policy indicators measuring the extent to which national policies promote environmental sustainability, structure markets equitably, and provide public goods
- Conducted sensitivity testing to ensure index robustness to weighting and normalization choices
- Carried out regression analysis to show that SSPI policy metrics are significant predictors of outcomes

Author - "Something in the Air: How Policy Affects Air Quality" - [Working Paper](#)

Senior Honors Thesis - Supervised by Prof. Clair Brown, UC Berkeley (Jan 2022 - May 2022)

- Scraped HTML and JSON data from the ECOLEX database using Python to generate a database of national air quality policies across 38 countries matched with 30 years of air quality outcome data
- Conducted a time series regression analysis of the relationship between air quality policy data and outcomes in R to assess which kinds of policies are most effective at reducing air pollution

Author - "Do Homeowners Care About Air Quality? Evidence from Wildfire Smoke" - [Working Paper](#)

Original Research Paper - Supervised by Prof. David Card and Silvia Fregoni, UC Berkeley (Aug 2021 - Dec 2021)

- Designed and implemented causal regression framework in R to estimate effects of air quality shocks on housing price, matching geospatial wildfire smoke data to housing price data at the US county-month level
- Accounted for spatial autocorrelation and matched relevant controls to reduce omitted variable bias and generate causal estimates for the effect of long-term shocks to air quality on housing prices

Education

University of California, Berkeley (Aug 2018 - May 2022)

Bachelor of Arts (BA) in Applied Mathematics, Statistics Concentration

Specializations: Advanced Probability and Statistics, Linear and Abstract Algebra, Computer Programming, Data Structures, Machine Learning and Artificial Intelligence

Bachelor of Arts (BA) in Economics, Honors

Specializations: Applied Econometrics and Public Policy, Empirical Economic Research