Alejandro Rodas

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EDUCATION

- **University of California, Berkeley (CDSS)** *Aug 2021 – May 2025*
  Bachelor of Arts in Data Science (Industrial Analytics Emphasis) Berkeley, CA

  Relevant Coursework: Data Engineering, Data Mining & Analytics, Probability for Data Science, Data Inference & Decisions, Principles & Techniques of Data Science, Data Structures & Algorithms.

  Awards & Scholarships: Generation Change Scholar, James Hjul Scholar, Allmond Scholar, Albert Job Scholar.

TECHNICAL SKILLS

Languages / Libraries: Python, Java, SQL, HTML, CSS, JavaScript, pandas, PyTorch, GeoPandas, matplotlib, scipy
DS/DA Skills: A/B testing, bootstrapping, EDA, dashboards (Tableau, Sigma), AWS, ETL, Bayesian Inference, Databases, Git, Advanced Stats (GLMs, Probabilistic Modeling, Causal Inference)

EXPERIENCE

- **UC Berkeley Financial Aid & Scholarships** *Mar 2022 – May 2025*
  Data Science Intern Berkeley, CA
  - Designed Python and SQL-based **data pipelines** and monitoring tools to track usage of scholar spaces.
  - Cleaned and integrated multi-year student and aid datasets into **relational schemas**, optimizing **SQL** queries for large-scale reporting.
  - Designed and analyzed **A/B tests** on outreach emails and student portals, improving FAFSA completion and critical financial-aid form response rates by **12%**.
  - Built **AWS/GCP dashboards** on aid usage, unmet need, retention, and first-gen/low-income outcomes to support policy decisions by financial officers.

- **U.S. Health Department (HHS)** *May 2024 – Aug 2024*
  Data Science Intern Washington, D.C. (Remote)
  - Developed regression, optimization models and **A/B tests** on CIL funding and utilization data (2019 vs. 2022) to quantify post-pandemic underperformance.
  - Helped to automate **ETL pipelines** using Python and APIs, reducing data processing time by **30%**.
  - Built **BigQuery** and **Tableau** dashboards summarizing funding and usage trends for non-technical decision-makers.
  - Synthesized pre-pandemic and post-pandemic funding and utilization findings with executive directors, contributing statistical analyses and visualizations to a federal report scheduled for release in 2026.

- **CDSS Discovery Research Program** *Jan 2024 – May 2024*
  Lead Researcher Berkeley, CA
  - Led a research team analyzing federal reports for **350+** Centers for Independent Living, cleaning and standardizing multi-year CSVs into a state-level dataset.
  - Applied Python-based **NLP** sentiment analysis (NLTK/VADER), correlation analysis, and visualizations (**pandas, matplotlib, seaborn, Plotly**) to relate funding, coverage, and reported achievements/challenges.
  - Merged CIL data with U.S. Census disability statistics to engineer coverage and funding-per-disabled-resident metrics capturing "good" CIL performance.
  - Built **Sigma and Tableau** dashboards and presented findings at the 2024 CDSS Data Discovery Spring Symposium to inform discussions on HHS resource allocation and to our policy team based in Princeton (Mathematica, Inc.)

HIGHLIGHTED PROJECTS

- **Causal Inference and ML (Python) for U.S. Primary Elections** *Spring 2025*
  - Conducted **causal analysis and Bayesian statistics** (e.g. Propensity Score Matching) to estimate endorsement effects.
  - Built and evaluated logistic regression and Random Forest models; **performed EDA on 2,600+ candidates.**
  - Tuned models; best Random Forest achieved **85% accuracy** and 0.78 F1-score; presented findings using **Matplotlib/Seaborn** in a 23-page paper.

- **Yelp Insights and NoSQL Data Processing with MongoDB** *Fall 2024*
  - Queried and analyzed semi-structured JSON data from Yelp business, review, and user datasets using PyMongo.
  - Designed **data pipelines and ETL pipelines** for aggregating and extracting user behavior insights.
  - Applied indexing and query optimization techniques to improve performance on unstructured datasets.

- **Campus Sensor Data Cleaning and Time-Series Interpolation in PostgreSQL** *Fall 2024*
  - Standardized HVAC and energy sensor data in **PostgreSQL**, resolving inconsistent units and building metadata tables.
  - Engineered 15-minute analysis-ready time-series tables using **SQL window functions**, median/MAD outlier handling, and interpolation to fill missing readings.
  - Produced clean, structured datasets used for **exploratory analysis** of campus energy usage.

- **Predicting Streaming Service Churn with Machine Learning** *Fall 2024*
  - Built machine learning models (NNs, Random Forests, Decision Trees) to predict churn rates with **85% accuracy**.
  - Used logistic regression to model churn probability and estimate marginal effects of key engagement features.
  - Evaluated models with ROC curves and AUC.