MUHAMMAD OMAR MUHDHAR

+1-817-918-5961 muhammad_muhdhar@berkeley.edu https://www.linkedin.com/in/muhammad-omar-muhdhar/
https://github.com/MuhammadOmarMuhdhar

TECHNICAL SKILLS

- **Programming & Data Engineering:** Python, SQL, R, Excel, Azure SQL Server, Azure Cosmos DB
- **Business Systems & Workflow Automation**: Power Automate, Power Apps, SharePoint, Tableau, Power BI

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY May 2025
Master of Arts in Computational Social Sciences

UNIVERSITY OF TEXAS AT AUSTIN September 2022
Bachelor of Arts in Government with Honors and a Minor in Philosophy

PROFESSIONAL EXPERIENCE

Business Analyst, *Ernst & Young Business Consulting* July 2022 - August 2024

- **Financial Data Analysis & Modeling:** Managed fund administration for four private equity funds ($1B+ assets). Extracted and analyzed financial data from PDFs, calculated Net Asset Value using Excel models, and recorded data in Investran. Developed Excel VBA solutions for transaction reconciliation and supported third-party auditors.
- **Data Management & Process Improvement:** Identified workflow gaps causing $2M worth of reporting errors in private equity accounting operations; designed and deployed a Power Apps-SharePoint pipeline with metadata forms, automated routing, and approvals. Enhanced data capture, traceability, and audit readiness, ensuring accurate financial reporting.
- **Performance Monitoring & Reporting**: Created automated data pipelines using Microsoft Power Automate to streamline performance-related email requests and schedule recurring reports for private equity fund operations. Reduced manual report preparation time from 3 hours to minutes
- **Government Systems & Vendor Invoice Processing**: During a 2-month SAM.gov consulting engagement, resolved invoice processing backlogs by migrating financial data into organized Excel spreadsheets and creating systematic workflows for data extraction, validation, and vendor payment processing.

RESEARCH PROJECTS

Housing Displacement Risk Analysis for Climate-Vulnerable Populations January 2025 - February 2025

- **Policy Research & Analysis**: Conducted economic and policy analysis to assess housing displacement risks among climate-vulnerable populations, focusing on income disparities and housing cost burdens across racial, ethnic, and socioeconomic groups.
- **Quantitative Data Analysis & Visualization**: Used Excel and R for statistical analysis of housing burden and eviction risks across demographics. Created demographic maps and temporal trend charts to clearly communicate insights, making complex data accessible for decision-makers.
- **Multi-Source Database Development:** Compiled and harmonized census tract-level data from the American Community Survey and Eviction Lab, to assess risk for 1.78 million residents.

Psychology of Poverty Literature Dashboard, *Center for Effective Global Action* January 2025 - May 2025

- **Data Pipeline Development**: Integrated multiple third-party APIs (OpenAlex, CrossRef, PubMed) to build a centralized poverty studies database in Google BigQuery, developing a Python-based ETL pipeline to extract and process metadata for 500,000+ academic papers spanning two decades.
- **Processing & Structuring Unstructured Data**: Built a transformer-based classification model trained on a small, annotated corpus to label research papers by topic, enabling structured analysis of academic literature.
- **Interactive Dashboard Design:** Created a Streamlit dashboard with bar charts, contour graphs, Sankey diagrams, and density maps to visualize topic distributions and surface emerging research trends in real time.

Demographic Modeling, *California State Water Resources Control Board* January 2025 - May 2025

- **Geospatial Data Engineering**: Utilized python to develop a GIS data engineering workflow to rescale and harmonize demographic, spatial, and water-use data across inconsistent geographic boundaries (e.g., census tracts, water service areas).
- **Integration of Remote Sensing Data (Light Density from Google Earth)**: Integrated remote sensing data, specifically nighttime light density from Google Earth Engine, to model intra-unit population distribution. This improved granularity and accuracy in representing population density within irregular spatial units.
- **Documentation & Knowledge Transfer:** Created clear technical documentation to ensure reproducibility of the GIS workflow. Supported capacity-building efforts by preparing handoff materials and walkthroughs to enable adoption of methods by internal teams.

California State Employee Return-to-Office Impact Analysis May 2025

- **Data Cleaning and Processing:** Processed and validated remote work data covering 110,000+ California state employees. Developed data validation procedures and derived metrics such as commute patterns, time savings, and resource allocation.
- **Forecasting and Scenario Analysis:** Utilized statistical models to assess financial and operational impacts of remote work policies, forecasting increases in commute time, miles, and fuel costs under 2-, 3-, and 4-day in-office scenarios.
- **Report Creation and Visualization using Tableau:** Designed a report utilizing Tableau to communicate workforce policy impacts, including time-series remote work trends, emissions projections, and financial summaries.