

# MUHAMMAD OMAR MUHDHAR

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## EDUCATION

### UNIVERSITY OF CALIFORNIA, BERKELEY

May 2025

*Master of Arts in Computational Social Sciences*

**Relevant Coursework:** Statistical Modeling, Machine Learning and Predictive Analytics, Data Visualization and Communication

### UNIVERSITY OF TEXAS AT AUSTIN

September 2022

*Bachelor of Arts in Government with Honors and a Minor in Philosophy.*

## PROFESSIONAL EXPERIENCE

### *Analyst, Ernst & Young Business Consulting*

July 2022 - August 2024

- Designed and implemented streamlined operational processes, including an efficient document management system, resulting in an improvement in workflow efficiency and reduced turnaround time.
- Leveraged SQL to manage and query large datasets for performance reporting, ensuring precise data extraction, transformation, and loading (ETL) processes.
- Collected and analyzed daily client emails using Microsoft Power Automate, identifying patterns to create procedures for recurring requests and creating a ServiceNow page for remaining inquiries, streamlining operational processes to enhance client interactions.
- Leveraged analyzed email data to generate monthly KPIs, providing actionable insights that drove process improvements and enhanced performance tracking.
- Implemented Excel-based automation solutions using VBA to optimize monthly processes, enhancing efficiency and accuracy while enabling more strategic financial analysis.
- Spearheaded the formation of a new team, developed operational processes, and implemented efficient document management practices, fostering a culture of teamwork and collaboration to enhance workflow efficiency.

## MACHINE LEARNING PROJECTS

### *Research Paper Visualizer*

- Built a modular pipeline for data extraction, summarization, and visualization, supported by comprehensive documentation to ensure replicability, scalability, and ease of use.
- Designed and implemented a scalable system in Python with API integrations to extract academic research papers, automating their stratification by year and field to enable targeted trend analysis and streamlined metadata organization.
- Developed a system to process academic text using natural language processing (NLP) techniques, embeddings, and clustering methods, structuring data to uncover meaningful semantic relationships across research fields..
- Utilized Large Language Models (LLMs) to produce concise, context-aware summaries of research text, distilling key insights from semantic groupings generated through NLP processing.
- Created interactive visualizations that integrate LLM-generated summaries with semantic groupings, enabling researchers to explore trends, relationships, and key insights across research fields.

## RESEARCH EXPERIENCE AND PERSONAL PROJECTS

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### UNIVERSITY OF TEXAS AT AUSTIN

*Researcher, Government Department at the University of Texas*

August 2021 - May 2022

- Conducted a research study evaluating the societal implications of Western and Chinese foreign aid in Uganda. The investigation focused on understanding the rise of China as a global power and its emergence as a novel aid source in Uganda, exploring the self-interested nature of Chinese aid in comparison to the altruistic portrayal of Western aid.
- Utilized Qualtrics to conduct a survey experiment distributed to 1000 respondents, demonstrating proficiency in handling extensive datasets and employing quantitative methodologies.
- Leveraged R programming to implement advanced statistical methodologies, including t-tests, in the analysis of survey data. Emphasizing a causal analysis approach, the study sought to unravel the cause-and-effect relationships within the socio-economic landscape of foreign aid in Uganda.
- Research project culminated in a comprehensive thesis paper and a presentation of survey experiment finding to peers, advisors, and stakeholders.

## LEADERSHIP EXPERIENCE

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*Director of University of Texas at Austin's Black President's Leadership Council*

July 2020 - May 2021

- Led the organization through a transformative phase, implementing initiatives that contributed to the immediate and broader discourse on racial equity and justice within the university community while working to build productive and collaborative working partnerships among 30+ Black University of Texas undergrad community organizations that represent over 5,000 students.
- Analyzed university wide data visualizations and datasets to decipher the root cause of issues affecting Black University of Texas students and create solutions to advise University admin on the proper plan to better the Black student experience.
- Increased the organization's operational capacity by utilizing effective communication strategies and institutionalizing sustainable routines to increase efficiency, and performance of the organization.
- Created an effective communication line between the Black University of Texas student population and University of Texas admin to address issues affecting the Black community on campus

*Director of External Relations for African American Affairs*

August 2019 - May 2020

- Responsible for optimizing communication strategies in the organization by identifying best methods to reach target audiences.
- Worked in a team to create engaging outreach for the Black UT population by planning and organizing informative and engaging events.

## TECHNICAL SKILLS

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- **Programming Languages:** Python (Proficient), SQL (Proficient), R (Familiar), Excel (Proficient)
- **Machine Learning:** Supervised learning, unsupervised learning, NLP
- **Statistical Analysis:** Regression modeling, causal inference, Synthetic Control Methods
- **Data Engineering:** API integration, data cleaning, feature engineering, and preprocessing for large-scale datasets
- **Visualization:** Interactive dashboards, clustering visualizations, trend analysis