ANDRÉS NIGENDA ZÁRATE

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EDUCATION

The University of Chicago Chicago, IL
MS, Computational Analysis and Public Policy *June 2020*

Instituto Tecnológico Autónomo de México (ITAM) Mexico City
BA, Economics with honors *December 2015*

EXPERIENCE

Mathematica Los Angeles, CA
Senior Data Scientist *January 2023 - Present*

- Design AI-driven analytics for policy and decision-making. Lead the application of AI and NLP techniques, including LLMs in zero- and few-shot settings, to automate literature reviews, classify unstructured text, and perform named entity recognition (NER), contributing to scalable AI-driven research.
- Lead research and data science tasks across multiple projects, co-directing the development and scale-up of a large-scale common market system supporting 40,000+ yearly applicants.
- Partner with stakeholders—including technical working groups and executive leadership—to refine analytical approaches, collect qualitative and quantitative data, and communicate research findings to technical and non-technical audiences.
- Collaborate with multidisciplinary teams to define research questions, measurement frameworks, develop analysis plans, conduct feasibility tests, and design data-driven, scalable pilots informed by experimentation and iteration.
- Manage multiple cross-functional teams of data scientists and research analysts at a time to deliver AI-informed insights shaping public policy recommendations.
- Assess systematic biases in research design and data collection, implementing methodologies to identify, document, and mitigate potential biases in AI-driven and policy-related research.
- Develop methodologies for sampling and ground truth data generation using administrative and extant data on proposals, Principal Investigator (PI), and institutional characteristics to assess economic and societal impacts.
- Evaluate research findings and AI system performance through iterative robustness testing, error analysis, and fairness metrics.
- Create and implement secure data handling plans, emphasizing the protection of personally identifiable and sensitive research data.

Data Scientist *July 2020 - December 2022*

- Conducted rigorous mixed-methods research with a focus on data science to define metrics and analyze economic and societal outcomes, particularly in STEM education, workforce, and the science of science.
- Applied causal inference techniques, such as synthetic controls and interrupted time series, to evaluate the impact of programs and policies on a variety of economic and social outcomes.
- Designed and implemented extract-transform-load (ETL) workflows to merge complex data from administrative and third-party sources, supporting program monitoring dashboards and back-end systems.

SELECT PROJECTS

Broader Impacts Process Evaluation 2023 - 2025
US National Science Foundation (NSF)

· Coauthored congressionally mandated report analyzing how the Broader Impacts review criterion, used to assess how proposed research benefits society, is perceived and applied by key stakeholders in NSF's merit review process. Led computational analysis component of mixed methods evaluation of customer service survey text responses and administrative text data using rule-based and zero-shot NLP methods.
· Tools and methods: Python, manual coding, inter-rater reliability, sentiment analysis, mixed methods.

Federated Data Usage Platform (DUP) 2023 - Present
America's Datahub Consortium

· Developed NLP-driven models to track federal datasets usage in academic publications, contributing to large-scale impact assessment of federally funded research. Investigated disciplinary representation challenges to improve fairness in dataset curation and model evaluation.
· Tools and methods: Hugging Face, AWS Step Functions, Python, Docker, Serverless.

Merit Review Patterns Analysis 2024 - Present
US National Science Foundation

· Led creation of analytical dataset to examine disparities in NSF funding decisions, assessing fairness and potential biases in the grant review process. Analyzed how different stages of the merit review process correct or introduce biases, using regression and decomposition methods to quantify the impact of systemic disparities.
· Tools and methods: R, Python, SQL, Gelbach decomposition, Regression.

PUBLICATIONS

Nigenda, Andrés; Katlyn Lee Milless, Elisa Steele, and Kimberley Raue. 2025. An Evaluation of the Broader Impacts Review Criterion. Alexandria, VA: U.S. National Science Foundation.

Tuttle, Christina; Elizabeth Gellman, Katlyn Lee Milless, Andrés Nigenda, Silvia Robles, Cecilia Speroni, Micah Wood, and Marykate Zukiewicz. 2024. Generating evidence for decision making with the U.S. National Science Foundation Education and Training Application (ETAP): Learning from a pilot of data collection efforts. Alexandria, VA: U.S. National Science Foundation.

Kozakowski, Whitney; Andrés Nigenda, Christina Tuttle. 2022. Anti-Harassment Study Findings [PowerPoint Presentation]. National Science Foundation, Alexandria, VA.

Nigenda, Andrés; Aaron Lemelin, Sarah John. 2019. Web Integrity Project, the Sunlight Foundation. How LGBTQ-related language and content has changed under the Trump Administration.

Nigenda, Andrés; Teshima, Kensuke. 2017. Unpublished manuscript. Changes in Wage Inequality in Mexico from 1988 to 1993: Approach Based on the Task Content of Occupations.

FELLOWSHIPS AND AWARDS

Hanna Holborn Gray Graduate Student Fellowship for Linked Data Management (2020)

Citibanamex Prize in Economics, 2nd place for best Economics thesis in Mexico (2016)

SKILLS

Technical Causal inference, statistics, data wrangling with Python, R, SQL; machine learning and NLP with Python (scikit-learn, spaCy, transformers); cloud computing with AWS; LLM capability evaluation; bias assessment

Languages Fluent English, Spanish and French