

Research Statement

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I am an undergraduate economics student at the University of California, Davis, specializing in International Macro-Finance and expecting to graduate in Spring 2027. My main interests are macroeconomics, monetary policy, financial economics, public policy, and international macroeconomics. I am also interested in the use of artificial intelligence in economic research. In particular, I want to understand how the Federal Reserve and other central banks develop and use models to interpret economic conditions and inform policy decisions.

My research experience so far has centered on building datasets and applying empirical tools to economic questions. Working with historical price records, political speeches, and administrative data has given me experience with different parts of this process. I want to build on that foundation as I develop my interests in macroeconomic research and policy analysis.

Research experience

From September 2024 to September 2025, I worked as a research assistant on the Global Price Initiative Project in the UC Davis Economics Department. I used machine learning to extract historical price data from newspapers, labeled and validated data to support model improvement, and helped manage a large-scale database. I also analyzed economic trends. This work gave me practical experience turning historical source material into data for economic analysis. It also drew my attention to the importance of checking the observations produced by automated extraction.

From January to June 2026, I worked on the Economic Narratives in Political Speech Project. I built Python scraping and optical character recognition (OCR) pipelines to curate political-speech text from around the world. I prepared these data for economic narrative analysis and retrieval-augmented generation (RAG) and large language model (LLM) workflows. My contribution focused on collecting and preparing the text. This experience connects to my interest in how computational tools can make new sources of information usable for economic research, while still requiring careful review of the underlying data.

Applied policy research

Since June 2026, I have worked as a student assistant at the California Department of Tax and Fee Administration. I conduct research on California's cannabis market, using econometric models and administrative data to estimate tax effects and forecast revenue. I also support revenue estimates and policy recommendations concerning prediction markets, gasoline markets, and the potential revenue effects of proposed ballot measures. This work has strengthened my interest in how empirical estimates and forecasts are used to address practical policy questions.

My work for the National College Federal Reserve Challenge brings me closer to the monetary-policy questions that interest me. I examine interest rates, inflation, economic indicators, and market conditions to develop recommendations for the federal funds rate. I am interested in the reasoning that connects these indicators to a policy recommendation: how to interpret different signals, what assumptions a recommendation depends on, and how to account for uncertainty. These are questions I want to study more systematically.

Research directions and preparation

I am currently exploring how central banks develop and deploy their policy models. I want to understand how economic theory, available data, and modeling choices enter that process, and how models are used alongside other evidence. My interest in international macro-finance also motivates me to learn how these approaches differ across economies. At this stage, my goal is to deepen my understanding of the models and empirical methods needed to turn these broad interests into focused research questions.

Alongside economics, I am exploring the local deployment of LLMs and agentic AI. I am learning the foundations of neural networks and machine learning, as well as tools such as LangChain. I want to understand these methods well enough to assess where they are useful in data collection, text analysis, and research workflows. My experience with historical-price extraction and political-speech data gives me a practical starting point for asking those questions. This remains an area of ongoing learning for me.

My coursework includes econometrics, microeconomic and macroeconomic theory, calculus, linear algebra, differential equations, finance, and international economics. I work with Python, R, Stata, and MATLAB, and have experience with web scraping, OCR, data cleaning, API use, and LLM-assisted text analysis. I would like to build on this preparation through further study of macroeconomic modeling and empirical analysis. My aim is to become better at formulating a clear economic question, choosing methods suited to it, and explaining what the evidence supports.