

# Max Ghenis

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## Summary

Policy entrepreneur, technologist, and economist building computational tools that democratize policy analysis. Founder of PolicyEngine, a nonprofit software platform that computes personalized and population-level impacts of tax and benefit reforms. Expert in microsimulation modeling, machine learning for survey data enhancement, and economic impact assessment.

## Professional Experience

### Co-founder and CEO, PolicyEngine

October 2021 - Present

- Founded and currently lead PolicyEngine, a nonprofit software platform enabling policymakers, researchers, and citizens to analyze personalized and population-level impacts of tax and benefit policy reforms in the US and UK
- Built comprehensive tax and benefit microsimulation models covering federal and state income taxes, payroll taxes, capital gains, VAT, and major benefit programs including Medicaid, CHIP, ACA subsidies, SNAP, SSI, TANF, Universal Credit, Child Tax Credit, and Social Security/State Pension benefit taxation
- Serve diverse users including government agencies (Joint Economic Committee, DC Council, NY Senate), research organizations (NBER), universities (Georgetown, University of Michigan), think tanks (Niskanen Center, Arnold Ventures), and advocacy organizations
- Launched PolicyEngine UK in October 2021; launched PolicyEngine US in 2022 with all 50 states and federal programs

- Secured and delivered grants, research contracts, and API service agreements with partners including Federal Reserve Bank of Atlanta, NBER, National Science Foundation (\$300K), NEO Philanthropy (\$200K), and Nuffield Foundation (£250K)
- Enhanced microsimulation accuracy using machine learning for variable imputation and survey weight calibration, reducing deviations from administrative statistics by 97%

## Founder and President, UBI Center

April 2019 - March 2023

- Created an open source think tank conducting quantitative research into universal basic income and cash transfer policies
- Managed team of up to a dozen researchers, collectively producing over 60 reports and interactive analytical products
- Developed open-source tools for distributional policy analysis, including microdf Python library for weighted survey data analysis
- Published research influencing policy debates on child allowances, carbon dividends, and tax reform

## Independent Economics Researcher

July 2018 - March 2019

- Produced a synthetic releasable version of the IRS Public Use File for open-source tax analysis as part of the Open Source Policy Center's Tax-Calculator project (Python)
- Contributed to Tax-Calculator's imputation of variables from Current Population Survey to IRS data sets
- Conducted distributional analysis of federal cash transfer policies including EITC, CTC, and UBI (Python+Jupyter)

## Product Analyst / Data Scientist, YouTube

July 2015 - July 2018

- Led analytics for emerging markets and YouTube Go—an app for low-bandwidth users—including modeling user retention, designing and analyzing experiments and quasiexperiments, and advising on data infrastructure
- Associated geographic consumption of video segments with economic indicators
- Built tool for automatically estimating causal impact of mobile data discount campaigns on YouTube consumption using Bayesian time series
- Developed and productionized classification of 100M+ content creators using PCA and LASSO

- Built forecast model for daily reach for thousands of slices using hierarchical time series
- Conducted first deep-dive analysis of female YouTube usage
- Led quantitative analysis for algorithm estimating reach across videos, channels, and countries

## People Analytics Manager, Google

July 2010 - July 2015

- Promoted twice (People Analyst → Senior People Analyst → People Analytics Manager), co-founding People Analytics Data Science team and establishing data-driven approaches to workforce planning and organizational effectiveness
- Led social network analysis of company-wide survey, including force-directed graph layouts, predictors of employee PageRank centrality and edge formation, and organizational integration
- Conceptualized and executed restructure of People Analytics survey data, leveraging internal SQL and writing functions in custom R package for consistent, efficient, longitudinal analysis
- Analyzed promotion and transfer activity via survival analysis and random forests
- Created automatic headcount forecast using R Monte Carlo simulation, chaining ARIMA, Cox survival models, and random forests
- Built R package for topic modeling and sentiment analysis, applied to 15+ domains and 350k+ documents
- Identified interviewers and hiring stages most predictive of hiring and performance outcomes
- Created original educational content for Sheets, R, and SQL; delivered 200+ hours of teaching to hundreds of employees; held YouTube lectures for G Suite and Google's data analysis MOOC

## Analyst / Senior Analyst, Beghou Consulting

June 2008 - July 2010

- Promoted from Analyst to Senior Analyst during tenure
- Consulted for pharmaceutical companies on sales force optimization, territory alignment, and resource allocation
- Developed predictive models for sales forecasting and market analysis

## Education

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M.S., Data, Economics, and Development Policy | 2020 Massachusetts Institute of Technology

## Key Skills & Technologies

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### Programming & Data Science:

- Expert: Python (pandas, NumPy, scikit-learn), R (ggplot2, tidyverse), SQL, Jupyter
- Proficient: JavaScript/TypeScript, React, Stata, Google Apps Script, Linux/shell
- Intermediate: SAS, VBA

### AI & Modern Development:

- LLM programming and prompt engineering
- AI coding agents (Claude Code, GitHub Copilot)
- Automated code generation and testing

### Specialized Expertise:

- Microsimulation modeling and agent-based simulation
- Machine learning for survey data imputation and calibration
- Tax and benefit policy analysis
- Distributional economic impact assessment
- Causal inference and experimental design
- Data visualization and interactive tools
- Open-source software development

### Domain Knowledge:

- Tax policy design and reform analysis (income, payroll, wealth, carbon taxation)
- Social insurance programs and benefit-cliff analysis
- Universal basic income and cash transfer policies
- Survey methodology, synthetic data generation, and statistical matching
- Poverty and inequality measurement (SPM, deep poverty, distributional analysis)

## Selected Publications & Research

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## Working Papers

- What can LLMs tell us about the ETI? With Jason DeBacker. SSRN Working Paper, August 2025.
- AI Model Policy Impact Forecasts: A Narrative Prompting Approach. November 2024.
- Enhancing Survey Microdata with Administrative Records. With Nikhil Woodruff. Presented at National Tax Association meeting, November 2024.

## Book Chapters

- Mortality, existential risk, and universal basic income. In *Death And Anti-Death, Volume 18: Fifty Years After Earth Day*, edited by Charles Tandy. RIA University Press, 2021.

## PolicyEngine Research

- GiveCalc US: Calculate your charitable giving tax savings. December 2025.
- GiveCalc UK: Calculate your Gift Aid tax relief. December 2025.
- How a £2,000 salary sacrifice cap would affect workers. With Vahid Ahmadi. November 2025.
- OBR November 2025 economic projections: what changed. November 2025.
- High value council tax surcharge: constituency-level impact. November 2025.
- Marginal tax rates in California's proposed billionaire tax. October 2025.
- How we used Claude Code to choose our DC office. With Daphne Hansell. October 2025.
- Event: PolicyEngine 2.0 and the Future of Public Policy Analysis. September 2025.
- PolicyEngine and NBER sign memorandum of understanding for TAXSIM emulator development. With Pavel Makarchuk. September 2025.
- National Science Foundation awards PolicyEngine \$300,000 grant. August 2025.
- Enhanced CPS full launch: Comprehensive microdata for policy analysis. With Nikhil Woodruff, Ben Ogorek, and Maria Juaristi. August 2025.
- Introducing the OBBBA Household Explorer. With Pavel Makarchuk and Elena Cura. July 2025.
- The Tax Cuts for Workers Act. With Pavel Makarchuk. June 2025.
- Manager's Amendment to H.R.1 - The One Big Beautiful Bill Act. With Pavel Makarchuk and David Trimmer. May 2025.
- Ways and Means Committee's SALT Cap. With Pavel Makarchuk and David Trimmer. May 2025.
- Analyzing Energy Policy with PolicyEngine. April 2025.
- What's the SALternative?. With Pavel Makarchuk. April 2025.
- MyFriendBen Launches in North Carolina, Using PolicyEngine API. April 2025.

- Restricting eligibility for the Personal Independence Payment Daily Living part. With Nikhil Woodruff. March 2025.
- How Would Each Presidential Candidate's Economic Plans Affect Your Household?. With Pavel Makarchuk. November 2024.
- Kamala Harris's LIFT Act Middle Class Tax Credit. With Pavel Makarchuk. July 2024.
- Analysis of JD Vance's Suggested \$5,000 Child Tax Credit Expansion. With Pavel Makarchuk. August 2024.
- Kamala Harris's Child Tax Credit Proposal. With Pavel Makarchuk. August 2024.
- How the Rent Relief Act of 2019 Varies with Income and Location. August 2024.
- How the Oregon Rebate May Affect Poverty Rates. With Pavel Makarchuk. September 2024.
- PolicyEngine Powers Niskanen Center's Analysis. With Ben Gross. July 2024.
- Introducing GiveCalc. With Pavel Makarchuk. December 2024.
- NEO Philanthropy Awards \$200,000 Grant to PolicyEngine. December 2024.
- Nuffield Foundation awards £250k to enhance PolicyEngine UK. December 2024.
- PolicyEngine US Launches Behavioral Responses. With Nikhil Woodruff, Jason DeBacker, and Vahid Ahmadi. December 2024.
- PolicyEngine US in 2024: A year in review. With Nikhil Woodruff. December 2024.
- PolicyEngine UK in 2024: A year in review. With Nikhil Woodruff. December 2024.
- Preliminary analysis of the Wyden-Smith Child Tax Credit expansion. With Pavel Makarchuk. January 2024.
- Beta-launch: PolicyEngine's enhanced microdata for policy analysis. With Nikhil Woodruff. March 2024.
- Child Tax Credit Provisions of the Tax Relief for American Workers and Families Act. March 2024.
- Individual income tax provisions of President Biden's 2025 Budget. With Pavel Makarchuk. March 2024.
- Scott Winship's individualized Earned Income Tax Credit proposal. 2023.
- Analysis of the Working Families Tax Cut Act. With Nikhil Woodruff. 2023.
- Analysis of Guaranteed Income for the 21st Century. 2023.
- The Child Tax Credit in 2023. 2023.
- How would reforms affect cliffs?. With Nikhil Woodruff. 2023.
- Electric vehicle tax credits under current law and the Inflation Reduction Act. 2022.

## Substack

- VAT thresholds, revenues, and the role of counterfactuals. August 2025.
- AI models favor Cuomo over Mamdani on NYC housing production. June 2025.
- What Will the House Ways & Means Committee Propose on Tuesday?. May 2025.
- My 2024 in Code: Personal Projects & AI Tools. January 2025.
- Elon Musk's AI Predicts Americans Will Be \$800 Richer Under Harris. November 2024.

## UBI Center Research

- The Inflation Reduction Act discourages electric vehicle buyers from working. 2022. *Winner of Robert Corrin Prize for Outstanding Research from the Savings and Retirement Foundation*
- How does targeted cash assistance affect incentives to work? 2022.
- The progressivity of a UK carbon dividend. With Nikhil Woodruff. 2022.
- Carbon dividends as anti-poverty policy. 2021.
- Analysis of Senator Romney's Family Security Act. 2021.
- Revenue and Distributional Impacts of the American Rescue Plan Act. With Jason DeBacker, Richard W. Evans, and Cody Kallen. 2021.
- Distributional analysis of Andrew Yang's Freedom Dividend. 2019.

## Conference Presentations & Speaking Engagements

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**National Tax Association (NTA) 117th Annual Conference on Taxation** | November 2024, Detroit, MI - "What Can LLMs Tell Us about the ETI?" With Jason DeBacker - "PolicyEngine's Enhanced Current Population Survey for Tax-Benefit Microsimulation." With Nikhil Woodruff

**Association for Public Policy Analysis and Management (APPAM) Fall Research Conference** | November 2024

**National Tax Association Spring Symposium** | 2024

BenCon | 2024

**Open Sustainability Summit** | 2024

**Rules as Code Europe** | March 2025, Paris, France

**Society of Government Economists (SGE) Annual Conference** | Washington, DC

**University Guest Lectures** | 2024 - UC Berkeley - Northwestern University - George Mason University - University of Toronto

**Rules as Code Demo Day, Beeck Center** | June 2022, Washington, DC - Presented PolicyEngine platform with Nikhil Woodruff

## Professional Affiliations & Advisory Roles

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### **Leadership Council Member, Policy Simulation Library**

*September 2020 - Present*

- Lead organization supporting open source products for public policy analysis

### **Synthetic Data Advisory Board Member, Tax Policy Center**

*August 2019 - Present*

- Advise on development of synthetic version of IRS Public Use File for accurate, privacy-safe policy analysis