Contact

thyu538@gmail.com

www.linkedin.com/in/tom-hs-yu (LinkedIn)

Top Skills

Applied Machine Learning
Python (Programming Language)
Causal Inference

Languages

Mandarin Chinese (Professional Working)
English (Native or Bilingual)
Korean (Native or Bilingual)

Honors-Awards

Phi Beta Kappa - Junior Inductee
Christian A. Johnson Prize in Economics
Class of 2016 Salutatorian

Tom Yu

Economist at AWS | Causal Inference, AI/ML
Stanford, California, United States

Summary

Economist applying causal inference and machine learning to high-stakes business problems in multi-sided markets. I specialize in designing rigorous measurement frameworks— Difference-in-Differences, synthetic control, propensity score weighting, CLV, and transformer-based causal inference framework—to quantify program impact and guide strategic decisions.PhD in Political Economy from Stanford GSB with an MS in Statistics. My research spanned best-arm identification in multi-armed experiments and survey experiments on political behavior. I bring both methodological depth and a practical focus on translating complex analyses into actionable business recommendations.

Experience

Amazon Web Services (AWS)

1 year 1 month

Economist II

December 2025 - Present (3 months)
San Francisco Bay Area

Economist on the Central Econ & Science team

- Developing a transformer-based causal inference framework for counterfactual prediction, leveraging decoder-only architectures (GPT-2) to model sequential customer behavior and estimate treatment effects across multi-treatment settings.

Economist

February 2025 - November 2025 (10 months)
San Francisco Bay Area

- Developed causal inference frameworks (Matched Difference-in-Differences, Augmented Inverse Propensity Score Weighting, Synthetic Control) to measure program incrementality and ROI, directly informing multi-million dollar investment decisions on partner programs.
- Built a Customer Lifetime Value (CLV) framework integrating semi-parametric and machine learning methods (Random Survival Forest) for churn prediction,

enabling long-term growth diagnostics across acquisition, retention, and expansion dimensions.
- Designed simulation-based power analysis tools with custom parallel computing implementation, reducing compute time by 80%+ and guiding experimental design for strategic pilots.

Tesla
Senior Data Scientist
April 2024 - February 2025 (11 months)
Fremont, California, United States

Data Scientist on the Core Business (Sales, Service, and Delivery) Team.
- ML-based service demand forecast modeling, enabling service planning for 250+ service locations in North America.
- Causal inference methods (e.g., Synthetic Control method) for the sales lift estimation.
- Experiment (A/B test) design and HTE estimation for leads identification in the sales and customer base growth/engagement campaigns.

Netflix
Experimentation and Causal Inference Intern
June 2023 - September 2023 (4 months)
Los Gatos, California, United States

- Developed methods for mitigating non-response bias (via inverse propensity score weighting methods) and improving the representativeness (via raking) of the survey data.
- Implemented ML models trained to predict survey ratings from users, the prediction of which was leveraged to guide business decisions on objective quality metrics.
- Collaborated with engineering and design stakeholders from various sister teams for refining and applying survey-based metrics.

Analysis Group
Analyst
August 2016 - May 2017 (10 months)
Greater Denver Area

- Applied econometric and causal inference methods (Diff-in-Diff and IV) to address the client’s request to identify the macroeconomic benefits facilitated by their core product in Latin American countries.

- Implemented a PDF-scraping method on Python to expedite the computation of profit damages and conducted over 150 hours of due diligence for an intellectual property case.

Education

Stanford University Graduate School of Business

Doctor of Philosophy - PhD, Political Economy · (August 2017 - March 2024)

Stanford University

Master of Science - MS, Statistics · (August 2021 - June 2023)

Middlebury College

Bachelor's Degree (Summa Cum Laude), Economics (Highest Honors) · (2012 - 2016)