TERENCE CHAU

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EDUCATION

Ph.D. & M.A. in Public Policy, University of Chicago — Expected Summer 2023
Fields (Department of Economics): Labor Economics; Econometrics and Statistics
Dissertation Title: Essays on Innovation and Economic History

Bachelor of Economics, Universidad de Costa Rica — 2016

SKILLS

Areas of Expertise	Economics, Econometrics, Causal Inference, Machine Learning
Technical Skills	Experimentation, Quasiexperimentation, Probabilistic Data Linkage
Software	Advanced: R, Stata, GIS. Intermediate: Python, Apache Spark (Scala), SQL, S3

RESEARCH & DATA ANALYSIS EXPERIENCE

Intern - Economics, Core AI — June 2022 - September 2022
Amazon — *Seattle, WA*

- Designed and carried out causal analysis of internal business question using AWS (SageMaker & S3) and Spark on longitudinal data with hundreds of millions of observations.
- Wrote 30-page white paper, 2-page executive summary, and communicated results to non-technical stakeholders.
- Success of project led to stakeholder agreement to run a follow up large scale, nationwide experiment.

Doctoral Researcher — June 2018 - Present
Harris School of Public Policy, University of Chicago — *Chicago, IL*

- Main thesis chapter: Quantified the impact of NASA's creation on innovation using difference-in-differences and event study models. Found spaceflight patenting increased 47.9% post-NASA, impact of these fields increased by 65.6%, and impact extended to non-spaceflight fields.
- Linked patents to all 1850-1880 US manufacturing firms using random forests. Found handlinking achieves highest accuracy in low dimensional setting with rare true matches.
- Mapped river-level waterpower across entire US using high resolution National Hydrography GIS data to study geographic firm clustering in the 19th century.

Graduate Research Assistant — June 2018 - Present
Harris School of Public Policy & Booth School of Business, University of Chicago — *Chicago, IL*

- Longitudinally linked all 1850-1880 US manufacturing firms using logistic regression, random forests, and XGBoost. Supervised 20 research assistants to create training data from digitized historical Census manuscripts.
- Predicted domestic abuse recidivism in Manchester, UK. Showed current police protocol predicts similarly to a random guess. Developed sampling-based, asymmetric cost random forest classifier that increased predictive power by 27.2%.
- Studied the effect of German geographic dialect on wages using historical dialect data and IV-LASSO. Crosschecked R and Stata implementations and discovered estimation coding error in official IV-LASSO R library.

OTHER RELEVANT EXPERIENCE

Graduate Instructor & Head Teaching Assistant — June 2018 - December 2021
Harris School of Public Policy, University of Chicago — *Chicago, IL*

- Instructor, Coding Lab for Public Policy (Fall 2020): introduced 329 masters students, majority with no previous coding or statistical experience, to principles of coding and data analysis in R (Course website).
- Head TA: assisted Program Evaluation, a causal inference course (in R and Stata) for up to 192 masters students from 2018 to 2021.