SÉBASTIEN ANNAN-PHAN

Economist and Statistician

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Technical skills

Quantitative Methods	Causal inference, econometric methods, machine learning, experimentation, simulation.
Qualitative Methods	Data visualisations, survey and in-depth interviews, international field work.
Languages & Tools	R, Python, SQL, Stata, LaTeX, Git, Illustrator.

Education

University of California, Berkeley — 2017 - 2021
PhD in Economics

École Normale Supérieure, Paris-Saclay — 2011 - 2014
B.A and MSc in Economics

Experience

I have a decade of experience in economics research, statistics and data science, applying quantiative methods and economic framework to key policy and business questions. My professional mantra is to stay curious and keep digging until I get to the bottom of things.

Worldcoin — 2022 -
Staff Statistician — *San Francisco, CA*

- As a key member of the Economics & Data Science team, I work as the primary point of contact for statistical and causal analysis for product, market Ops, tokenomics, market design, and the office of the CEO.
- My work-streams are spanning across different level horizontally and vertically, including: building ML models for predictions or very tractable models to understand causal relationships.

JD.com — 2021 - 2022
Research Scientist — *Mountain View, CA*

- Partnered with product managers and researchers to deliver innovative classification algorithms with significant business impact on marketing campaign efficiency, sales, and customer engagement:
- Developed and launched privacy compliant pricing algorithms.
- Evaluated and optimized parallel experiments.

Global Policy Laboratory / UC Berkeley — 2017 - 2021
Co-Investigator and PhD Fellow — *Berkeley, CA*

- Designed, conducted, and collaborated on data-driven policy relevant research projects through the lens of economics.
- Estimated the causal effect of electricity markets integration to mitigate the impact of climate change, using panel data regression, optimization algorithm, and spatial analysis. *Awarded 2019 UC Berkeley Best Paper*
- Collected, analyzed, and interpreted data on the effect of anti-contagion policies on the spread of COVID-19. Took part in a team effort to broadcast our results - published in Nature - to policy and decisions makers including the White House Office of Management and Budget & the CDC. *Ranked 22nd most discussed paper of 2020* ⧉
- Taught Microeconomics Theory and Environmental Economics & Policy to 300+ students classes over 4 semesters, focusing on economics methods.

Amazon Web Services — 2019
Economist (PhD Intern) — *Seattle, WA*

- Applied a mixture of causal inference and machine learning to estimate demand for large computing power.
- Leveraged big data to identify heterogeneous treatment effects with unsupervised and supervised algorithms, random forest and causal tree.
- Drafted non-technical reports and held seminars to communicate findings to cross-functional partners and organization leadership.

Pre-doctoral experience

Energy Policy Institute at the University of Chicago   2015 - 2017
Research Specialist   *Chicago, IL*

- Collaborated on a multi-university project estimating the economic impacts of climate change.
- Combined empirical methods and simulations tools to produce standardized estimates. Methods included meta-analysis and large panel data regression.
- Utilized GIS methods in R/Python to process and aggregate high-frequency climate data, as well as simulate future damages based on pre-estimated and crowd-sourced empirical results.

Compass Lexecon   2014
Economist/Associate   *Paris, France*

- Worked in the litigation and economics department on several regulatory and market design projects for European utilities and anti-trust regulators.
- Projects included: electricity storage potential, nuclear assets assessment and market power abuse.
- Designed and conducted a study leveraging high frequency wholesale market data to estimate the effect of renewable energies on electricity prices. *Published in a leading field outlet, The Energy Journal* ⬈

French Parliament   2012
Legislative Aide   *Paris, France*

- Drafted bill proposal on fuel tax exemptions and environmental taxation.

Research

Publications:

Journal of Urban Economics, 2023. "*Hot Temperatures, Aggression, and Death at the Hands of the Police: Evidence from the U.S*" Annan-Phan S. and Ba B.

Nature Scientific Reports, 2021. "*Public Mobility Data Enables COVID-19 Forecasting and Management at Local and Global Scales*" Illin C., Annan-Phan S., Tai X. et al.

Nature, 2020. "*The effect of large-scale anti-contagion policies on the COVID-19 pandemic*" with Hsiang S., Global Policy Laboratory, et al.

The Energy Journal, 2018. "*Market integration and wind generation: An empirical analysis of the impact of wind generation on cross-border power prices*" with Roques F.

The Energy Journal, 2016. "*The Impacts of Variable Renewable Production and Market Coupling on the Convergence of French and German Electricity Price*" with Keppler, J. H. and Le Pen Y.

Working papers:

"*A Distribution of Human Attention to Moments in Time using millions of Google searches*". Annan-Phan S., Biardeau L., and Hsiang S. R&R at **PNAS**

"*Adaptation through Market Integration: Mitigating the Impact of Climate Change on Energy Expenditure*" Annan-Phan S.

Distinctions

Tuaropaki Trust Doctoral Fellows, Goldman School of Public Policy   *2019 - 2020*
Hoos Sidney Best Econometric Paper Award, UC Berkeley   *2019*
International Graduate Fellowship, University of Chicago   *2016 - 2017*
Civil Servant Student Full Scholarship, École Normale Supérieure   *2011 - 2015*

Teaching

Microeconomics
University of California, Berkeley   *2017 - 2019, 2021*
Université Paris-Descartes   *2013*

Industrial Organization
Université Paris-Dauphine   *2014*