
JOSÉ BAYOÁN SANTIAGO CALDERÓN

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Education

2019	PhD Economics	Claremont Graduate University
2015	MA Economics	Claremont Graduate University
2014	BA Economics	Southwestern University

Minors in political science, mathematics, French, and Chinese.
Study abroad in Shanghai, China (12FA), and Paris, France (13SP).

Appointments and Employment

Research Economist · Full-time

[Analysis & Research Group](#) | National Economic Accounts Directorate
U.S. Bureau of Economic Analysis 2021 – Present

Working on topics related to the measurement of the digital economy and intellectual property products (e.g., software, data, R&D, AI).

Senior Scientist II · Contract | Part-time

[Pumas-AI](#) 2018 – 2023

My strategic & scientific consulting work included projects across multiple therapeutic areas such as rare diseases, metabolic diseases, pediatrics, oncology, and vaccines. I conducted multiple clinical trial evaluations of the safety and efficacy of formulations to support drug development strategies at the company (e.g., study design, stop/go decisions, model development, biomarker exploration, dose selection) and regulatory processes (e.g., type-C meetings).

My work in the product development team was primarily the development of the module for bioequivalence (BE) analysis in the Pumas ecosystem. This included the design, implementation, testing, documentation, maintenance, and coordination with the other components of the ecosystem.

Postdoctoral Research Associate · Full-time

[Social & Decision Analytics Division](#) | Biocomplexity Institute
University of Virginia 2019 – 2021

Contributed on government projects including *Measuring the Scope & Impact of Open Source Software* and the [Skilled Technical Workforce](#) for NCSSES, the [SocialSim](#) DARPA challenge, and evaluating the ACPD [Arlington Restaurant Initiative](#). In addition, I liaised with the computing resources team to facilitate the use of high-performance computing and best practices. Served as project lead and instructor for the Data Science for the Public Good Young Scholars Program ([DSPG](#)).

Data Scientist · Contract | Full-time

Residential Energy and Water Intelligence (Res-Intel) 2016 – 2018
Developed a residential benchmarking platform and conducted a Southern California Edison commissioned program evaluation of the California Advanced Home Program (CAHP).

Research Fellow · Seasonal | Full-time

AEA Summer Training and Scholarship Program (AEASP) 2016
Served as a research fellows for the advanced research methods course taught by Dr. Lisa D. Cook.

Research Fellow · Part-time

Center for Neuroeconomics Studies (CNS) 2014 – 2016
Worked on diverse aspects of performing neuroeconomic studies including study design, recruitment, running experiments, and analysis. These included handling scheduling, managing lab supplies, and supervising economic choice experiments. These experiments included administering drugs as well as collecting and analyzing data such as blood work, electrodermal activity (EDA/GSR), electroencephalography (EEG), electrocardiography (ECG), and eye-tracking.

Dissertation

J. Bayoán Santiago Calderón. 2019. “On Cluster Robust Models.” PhD diss., Claremont Graduate University. DOI: [10.5642/cguetd/132](https://doi.org/10.5642/cguetd/132)

Working Papers

Christopher Vincent Rackauckas, Yingbo Ma, Andreas Noack, Vaibhav Dixit, Patrick Mogensen, Simon Byrne, Shubham Maddhashiya, J. Bayoán Santiago Calderón, Joakim Nyberg, Jogarao V.S. Gobburu, and Vijay Ivaturi. 2020. *Accelerated Predictive Healthcare Analytics with Pumas, A High Performance Pharmaceutical Modeling and Simulation Platform*. Preprint. Pharmacology and Toxicology. DOI: [10.1101/2020.11.28.402297](https://doi.org/10.1101/2020.11.28.402297)

Selected Peer-Reviewed Publications

Gizem Korkmaz, J. Bayoán Santiago Calderón, Brandon L. Kramer, Ledia Guci, and Carol A. Robbins. 2024. “From GitHub to GDP: A framework for measuring open source software innovation.” *Research Policy* 53 (3). ISSN: 0048-7333. DOI: [10.1016/j.respol.2024.104954](https://doi.org/10.1016/j.respol.2024.104954)

José Bayoán Santiago Calderón and Dylan Rassier. 2022. “Valuing the US Data Economy Using Machine Learning and Online Job Postings.” Chap. 5 in *Technology, Productivity, and Economic Growth*, edited by Susanto Basu, Lucy Eldridge, John Haltiwanger, and Erich Strassner. Washington, DC: National Bureau of Economic Research. <https://nber.org/books->

[and-chapters/technology-productivity-and-economic-growth](#)

- Behnaz Moradi-Jamei, Brandon L. Kramer, J. Bayoán Santiago Calderón, and Gizem Korkmaz. 2021. “Community Formation and Detection on GitHub Collaboration Networks.” In *Proceedings of the 2021 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 244–251. ASONAM '21. Virtual Event, Netherlands: Association for Computing Machinery. ISBN: 9781450391283. DOI: [10.1145/3487351.3488278](#)
- J. Bayoán Santiago Calderón. 2020. “Econometrics.jl.” *Proceedings of the JuliaCon Conferences* 1 (1): 38. DOI: [10.21105/jcon.00038](#)
- Mengchen Sam Yong, Lavínia Paganini, Huilian Sophie Qiu, and J. Bayoán Santiago Calderón. 2021. “The Diversity-Innovation Paradox in Open-Source Software.” In *2021 IEEE/ACM 18th International Conference on Mining Software Repositories (MSR)*. DOI: [10.1109/MSR52588.2021.00089](#)

Selected Presentations

- J. Bayoán Santiago Calderón and Dylan G. Rassier. 2023. *Valuing the U.S. Data Economy Using Machine Learning and Online Job Postings*. [Allied Social Science Associations \(ASSA\) Annual Meeting](#). New Orleans, LA, January 6, 2023
- J. Bayoán Santiago Calderón and Dylan G. Rassier. 2022. *Valuing the U.S. Data Economy Using Machine Learning and Online Job Postings*. 37th International Association for Research on Income and Wealth (IARIW) [General Conference](#). Luxembourg, August 23, 2022
- J. Bayoán Santiago Calderón, Gizem Korkmaz, Brandon L. Kramer, and Carol Ann Robbins. 2022. *Measuring the Cost of Open Source Software Innovation on GitHub*. [Allied Social Science Associations \(ASSA\) Annual Meeting](#). Remote presentation, January 8, 2022
- Carol A. Robbins, Gizem Korkmaz, Ledia Guci, J. Bayoán Santiago Calderón, and Brandon L. Kramer. 2021. *A First Look at Open Source Software Investment in the United States and in Other Countries, 2009-2019*. [International Association for Research in Income and Wealth \(IARIW\) / Economic Statistics Centre of Excellence \(ESCoE\) Conference on Measuring Intangible Assets and their Contributions to Growth](#). London, UK, November 11, 2021

Service

- Served as a Mentor for the [Association for Mentoring & Inclusion in Economics](#) (2023–2024), [Google Summer of Code \(GSOC\)](#) (2022), [Hacking for Human Rights](#) (2020), and [The Opportunity Project](#) (2019).
- Organizing committee member for the Government Advances in Statistical Programming (GASP) Conference (2021–2023)
- Board Member of the Asociación de Economistas de Puerto Rico (AEPR) (2022)
- Reviewer for *Computational and Mathematical Organization Theory* (ISSN: 1572-9346), *Proceedings of the JuliaCon Conferences (JCON)* (ISSN: 642-4029), *PLOS ONE* (ISSN: 1932-6203), and Americas Conference on Information Systems (AMCIS).