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

Appointments and Employment

Research Economist

Analysis & Research Group

National Economic Accounts Directorate — 2021 – Present

U.S. Bureau of Economic Analysis

Working on topics related to the digital economy and measuring intangible assets (e.g., open-source software, data).

Statistics Consultant

Pumas-AI — 2018 – Present

Work on the development of components for the pharmaceutical modeling and simulation platform and in the consulting services branch for statistical analysis.

Postdoctoral Research Associate

Social & Decision Analytics Division

Biocomplexity Institute & Initiative — 2019 – 2021

University of Virginia

Worked on multiple projects with government partners including:

- National Center for Science and Engineering Statistics (NCSES)
  - Measuring the Scope and Impact of Open Source Software
  - Skilled Technical Workforce
- Defense Advanced Research Projects Agency (DARPA)
  - Computational Simulation of Online Social Behavior (SocialSim) – Summary
- Arlington County Police Department (ACPD)
  - Evaluation of the Arlington Restaurant Initiative

Assisted the infrastructure team on helping the team best use UVA computing resources (e.g., high-performance computing) and best practices (e.g., version control). Served as project lead and instructor for the Data Science for the Public Good Young Scholars Program (DSPG).

Data Scientist

Residential Energy and Water Intelligence (Res-Intel) 2016 – 2018

Conducted a program evaluation of the California Advanced Home Program (CAHP) commissioned by Southern California Edison and developed the module for residential benchmarking.

Peer-Reviewed Publications

Behnaz Moradi Jamei, Brandon Lee Kramer, José 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 (ASONAM)*. Forthcoming

Mengchen Sam Yong, Lavínia Paganini, Huilian Sophie Qiu, and José Bayoán Santiago Calderón. 2021. "The Diversity-Innovation Paradox in Open-Source Software." Forthcoming, *MSR '21: Proceedings of the 18th International Conference on Mining Software Repositories* (May 19, 2021). DOI: 10.5281/ZENODO.4628556

José Bayoán Santiago Calderón. 2020a. "Econometrics.jl." *Proceedings of the JuliaCon Conferences* 1 (1): 38. DOI: 10.21105/jcon.00038

Miloslava Plachkinova and José Bayoán Santiago Calderón. 2016. "Adopting Healthcare Information Technology in Puerto Rico." In *2016 Americas Conference on Information Systems: Spanish, Portuguese, and Latin America (LACAIS Chapter)*. San Diego, CA, August 11, 2016. https://bit.ly/2PZiBk0

Dissertation

José Bayoán Santiago Calderón. 2019. "On Cluster Robust Models." PhD diss., Claremont Graduate University. DOI: 10.5642/cguetd/132

Working Papers

Christopher Vincent Rackauckas, Yingbo Ma, Andreas Noack, Vaibhav Dixit, Patrick Mogensen, Simon Byrne, Shubham Maddhashiya, José Bayoán Santiago Calderón, Joakim Nyberg, Joga 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

Selected Presentations

José Bayoán Santiago Calderón and Dylan Gerald Rassier. 2022. *Valuing the U.S. Data Economy using Machine Learning and Online Job Postings: Implications for Measured Production and Productivity.* National Bureau of Economic Research (NBER) Conference on Research in Income and Wealth (CRIW) on Technology, Productivity, and Economic Growth. Forthcoming. Washington, DC, March 17, 2022

José Bayoán Santiago Calderón, Gizem Korkmaz, Brandon Lee Kramer, and Carol Ann Robbins. 2022. *Measuring the Cost of Open Source Software Innovation on GitHub.* ASSA 2022. Remote, January 8, 2022

Carol Ann Robbins, Gizem Korkmaz, Ledia Guci, José Bayoán Santiago Calderón, and Brandon Lee 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

Brandon Lee Kramer, Gizem Korkmaz, José Bayoán Santiago Calderón, and Carol Ann Robbins. 2021. *A Longitudinal Analysis of International Collaboration on GitHub.* 3rd North American Social Networks Conference (NASN). Virtual, January 25, 2021

José Bayoán Santiago Calderón. 2020b. *Using Julia for Dissemination of Information About the General Election in Puerto Rico.* Government Advances in Statistical Programming (GASP!) Workshop. Virtual - Zoom, November 6, 2020

José Bayoán Santiago Calderón, Brandon Lee Kramer, Gizem Korkmaz, Carol Ann Robbins, Aaron David Schroeder, and Sallie Ann Keller. 2020. *Measuring the Cost and Impact of Open Source Software Innovation on GitHub.* Federal Committee on Statistical Methodology (FCSM) Computational Statistics and the Production of Official Statistics (CSPOS) Webinar on Blended Data. Washington, DC, May 1, 2020. https://youtu.be/46onb1YG33k

José Bayoán Santiago Calderón, Vicki Ann Lancaster, and Sarah McDonald. 2020. *Pathways to Jobs in the Skilled Technical Workforce.* Accepted to the Federal Committee on Statistical Methodology (FCSM) Research and Policy Conference but not presented because of COVID-19. Washington, DC, April 14, 2020

Carol Ann Robbins, Gizem Korkmaz, José Bayoán Santiago Calderón, Daniel Chen, Aaron David Schroeder, Claire Kelling, Stephanie Slepicka Shipp, and Sallie Ann Keller. 2019. *Open Source Software as Intangible Capital: Measuring the Cost and Impact of Free Digital Tools.* Government Advances in Statistical Programming (GASP!) Workshop. Washington, DC, September 23, 2019. https://youtu.be/xNQr9kCDJvo?t=2843

Carol Ann Robbins, Gizem Korkmaz, José Bayoán Santiago Calderón, Claire Kelling, Stephanie Slepicka Shipp, and Sallie Ann Keller. 2018b. "The Scope and Impact of Open Source Software: A Framework for Analysis and Preliminary Cost Estimates." In *35th International Association for Research on Income and Wealth (IARIW) General Conference,* 2A5. https://bit.ly/3tpeUSP

Carol Ann Robbins, Gizem Korkmaz, José Bayoán Santiago Calderón, Claire Kelling, Stephanie Slepicka Shipp, and Sallie Ann Keller. 2018a. "Open Source Software as Intangible Capital: Measuring the Cost and Impact of Free Digital Tools." In *The Sixth IMF Statistical Forum: Measuring Economic Welfare in the Digital Age: What and How?,* III1. International Monetary Fund (IMF). https://bit.ly/3dkQcNP