

Osmar Bolivar Rosales

Economist | AI Specialist for Economic Research

📍 La Paz, Bolivia

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Passionate about driving transformative progress at the intersection of AI and data-driven economics. Committed to shaping a future where data serves as a dynamic catalyst for informed governance and sustainable development. Ready to contribute to innovative solutions that bridge technology and economic insights.



Website and Online Profiles

- <https://osmarbolivar.github.io/>
- <https://www.linkedin.com/in/osmar-bolivar-rosales/>
- <https://github.com/osmarbolivar>



Skills

Critical Thinking | Problem Solving | Machine Learning | Econometrics | Remote Sensing



Work History

02/2024 – Current **Lead Specialist in AI for Economic Research**

MINISTRY OF ECONOMY AND PUBLIC FINANCE, Bolivia

Leading the design and development of AI projects for economic research, my focus is on delivering insights for evidence-based decision-making, particularly addressing economic growth, poverty, welfare, and other pivotal areas. In addition, I spearhead the implementation of a data governance framework, orchestrating the automation of Extract, Transform, Load (ETL) processes, visualization, and business intelligence. This strategic initiative is geared towards enhancing efficiency and productivity within the Ministry.

05/2021 – 02/2024 **Lead Researcher**

MINISTRY OF ECONOMY AND PUBLIC FINANCE, Bolivia

Conducting assessments of socioeconomic phenomena and policies through the application of advanced econometric methods and Machine Learning algorithms, as mandated by the Minister of Economy. Instrumental in crafting technical inputs to drive informed policy-making. Authoring scholarly working papers and studies slated for publication in the journal "Cuadernos de Investigación Económica Boliviana". Engaging in both theoretical and statistical analyses of the economic landscape.

- 2020 – 2021** **Consultancy - Research Article entitled “Roads Illuminate Development: Using Nightlight Luminosity to Assess the Impact of Transport Infrastructure”, Within the Framework of CAF's Project “Economic Integration in Latin America”**
DEVELOPMENT BANK OF LATIN AMERICA (CAF)
- Contributing to a groundbreaking Working Paper aimed at evaluating the impact of transport infrastructure on economic growth in Bolivia, Ecuador, and Paraguay. Pioneering the application of econometric methods, coupled with innovative data generation through remote sensing techniques on satellite imagery.*
- 2019 – 2019** **Consultancy - Research Article entitled “Descentralización en Bolivia: Eficacia y Externalidades”, Within the Framework of CAF's Project “Strengthening Economic Development Research in Bolivia”**
DEVELOPMENT BANK OF LATIN AMERICA (CAF)
- Co-authoring a published Working Paper within the book "Investigaciones para el Desarrollo Económico de Bolivia". Employing spatial econometrics techniques, the study empirically assesses the effectiveness of local-level public investment and resulting externalities.*
- 08/2017 – 02/2021** **Economist - Economic Modelling**
UNIT OF ANALYSIS OF SOCIAL AND ECONOMIC POLICIES (UDAPE), Bolivia
- Leading research initiatives on socioeconomic policies and economic juncture analyses. Developing intricate statistical and econometric models for the evaluation of policies and socioeconomic phenomena. Spearheading and publishing studies in collaboration with international organizations such as the Development Bank of Latin America (CAF) and the United Nations Population Fund.*
- 01/2015 – 08/2016** **Researcher**
MINISTRY OF ECONOMY AND PUBLIC FINANCE, Bolivia
- Conducting assessments of socioeconomic phenomena and policies through rigorous econometric methods. Offering crucial technical inputs for policy-making. Crafting working papers and studies for potential publication in the esteemed journal "Cuadernos de Investigación Económica Boliviana". Engaging in theoretical and statistical analyses of the economic landscape.*
- 04/2013 – 12/2014** **Economist - Real Sector of the Economy**
UNIT OF ANALYSIS OF SOCIAL AND ECONOMIC POLICIES (UDAPE), Bolivia
- Conducting research on the real sector of the economy, involving the compilation, processing, and analysis of data for research purposes. Engaging in both theoretical and statistical analyses of the economic juncture.*
- 10/2012 – 12/2012** **Economist - Fiscal Sector of the Economy**
UNIT OF ANALYSIS OF SOCIAL AND ECONOMIC POLICIES (UDAPE), Bolivia
- Conducting research on the fiscal sector, involving the compilation, processing, and analysis of data for research purposes.*
- 09/2011 – 09/2012** **Technical Assistant - Fiscal Sector of the Economy**
UNIT OF ANALYSIS OF SOCIAL AND ECONOMIC POLICIES (UDAPE), Bolivia
- Elaborating analytical documents regarding the fiscal sector of the economy. Managing databases and preparing statistical reports corresponding to the fiscal sector of the economy.*

Education

- 08/2016 – 06/2017** **Master of Arts in Policy Economics**
WILLIAMS COLLEGE, Massachusetts, USA
- 03/2015 – 03/2016** **Master of Science in Applied Economics**
UNIVERSIDAD ANDINA SIMÓN BOLIVAR, Bolivia
- 2015** **Postgraduate Diploma in Preparation and Evaluation of Public Investment Projects**
UNIVERSIDAD PRIVADA BOLIVIANA, Bolivia
- 2014** **Postgraduate Diploma in Public Management of Productive Development**
ESCUELA DE GESTIÓN PÚBLICA PLURINACIONAL, Bolivia
- 2013** **Postgraduate Diploma in Evaluation of Social Policies**
UNIVERSIDAD CATÓLICA BOLIVIANA, Bolivia
- 2012** **Postgraduate Diploma in Applied Economics**
ESCUELA MILITAR DE INGENIERÍA, Bolivia
- 2006 - 2010** **Bachelor's Degree in Economics**
UNIVERSIDAD MAYOR DE SAN ANDRÉS, Bolivia

Journal/Working Papers

- Bolivar, O. (2024). **"GDP Nowcasting: A machine learning and remote sensing data-based approach for Bolivia"**. *Latin American Journal of Central Banking*, 5(3): 100126.
- Bolivar, O., Huanto, C. & Teran, R. (2023). **"Expectativas de inflación: Dinámica y efectos para América del Sur"**. *Cuadernos de Investigación Económica Boliviana*, 6(1): 7-63.
- Bolivar, O. (2023). **"Evolución de la pobreza en las comunidades de Bolivia entre 2012 y 2022: Un enfoque de machine learning y teledetección"**. *MPRA Paper from University Library of Munich*.
- Bolivar, O. (2022). **"Efecto Multiplicador: Evidencia empírica para una asignación costo-efectiva de la inversión pública"**. *Cuadernos de Investigación Económica Boliviana*, 5(2): 7-63.
- Bolivar, O. (2022). **"Dinámica Inflacionaria, Crecimiento Económico y Empleo en los contextos de pandemia y pospandemia para América del Sur"**. First Place in the call for papers of the 15th Meeting of Economists of Bolivia organized by the Central Bank of Bolivia (forthcoming publication in the *Revista de Análisis del Banco Central de Bolivia*).
- Bolivar, O. (2022). **"Roads illuminate development: Using nightlight luminosity to assess the impact of transport infrastructure"**. Research Department Working Papers 1910, CAF - Development Bank of Latin America.
- Bolivar, O. (2021). **"Boyanza Tributaria: Relación con la sostenibilidad fiscal y estabilizadores automáticos"**. *Cuadernos de Investigación Económica Boliviana*, 4(2): 53-95.
- Bolivar, O. (2020). **"Evaluación de impacto de la infraestructura vial en el crecimiento económico: Una aproximación con base en información satelital de luminosidad para Bolivia"**.

CAF-UDAPE, & O. Bolivar (Ed.), Evaluación de impacto de la infraestructura vial en Bolivia (págs. 11-70). La Paz, Bolivia: Editorial del Estado Plurinacional de Bolivia.

- Bolivar, O. & Ugarte, D. (2020). **"Evaluación de impacto de la infraestructura vial sobre las condiciones socioeconómicas de la población"**. CAF-UDAPE, & O. Bolivar (Ed.), Evaluación de impacto de la infraestructura vial en Bolivia (pp. 71-117). La Paz, Bolivia: Editorial del Estado Plurinacional de Bolivia.
- Ugarte, D. & Bolivar, O. (2019). **"Descentralización en Bolivia: eficacia y externalidades"**. CAF-INESAD-ABCE (Ed.), Investigaciones para el Desarrollo Económico de Bolivia (pp. 113-168). La Paz, Bolivia.
- Bolivar, O. (2017). **"Desdolarización en Bolivia: Interacción con la Política Monetaria y el Tipo de Cambio"**. Presented at the 10th Meeting of Economists of Bolivia organized by the Central Bank of Bolivia.
- Bolivar, O. (2016). **"Bolivianization and Effectiveness of the Monetary Policy"**. *Cuadernos de Investigación Económica Boliviana*, 1(2): 55-98.
- Bolivar, O. & D. Ugarte (2015). **"Domestic Demand as Engine of the Economic Growth in Bolivia"**. *Cuadernos de Investigación Económica Boliviana*, 1(1): 7-44.
- Ugarte, D. & Bolivar, O. (2015). **"The Effect of Income Redistribution on Poverty Reduction of Bolivia"**. *Cuadernos de Investigación Económica Boliviana*, 1(1): 45-80.
- Ugarte, D. & Bolivar, O. (2015). **"La Relación Precio del Petróleo y Crecimiento Económico en Bolivia: El Rol de la Política Económica"**. *Revista de Análisis del Banco Central de Bolivia*, 22(1): 9-40.



Acknowledgements

- My research "GDP Nowcasting: A machine learning and remote sensing data-based approach for Bolivia" was granted the **First Place of the Call for Papers: 2023 Central Bank Award Rodrigo Gómez by the Center for Latin American Monetary Studies (CEMLA)**.
- My research "Dinámica Inflacionaria, Crecimiento Económico y Empleo en los contextos de pandemia y pospandemia para América del Sur" was granted the **First Place of the Call for Papers: 2022 Meeting of Economists of Bolivia by the Central Bank of Bolivia**.
- My research "Roads illuminate development: Using nightlight luminosity to assess the impact of transport infrastructure" received **funding as a Finalist in the Research Proposal Call "Integration in Latin America: The Role of Regulations, Administrative Procedures, and Physical Infrastructure" by the Development Bank of Latin America (CAF)**.
- My research "Descentralización en Bolivia: eficacia y externalidades" was granted **funding as a Winner of the Research Proposal Call "Research on Economic Development in Bolivia" by the Development Bank of Latin America (CAF)**.
- My research "La Relación Precio del Petróleo y Crecimiento Económico en Bolivia: El Rol de la Política Económica" was granted the **First Place of the Call for Papers: 2015 Meeting of Economists of Bolivia by the Central Bank of Bolivia**.
- **Scholarship for the Master in Policy Economics, awarded by Williams College, Massachusetts, United States.**

Certifications Courses

- **DEEP LEARNING SPECIALIZATION** by *DeepLearning.AI* (January 2024)
 - Course 1: Neural Networks and Deep Learning
 - Course 2: Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
 - Course 3: Structuring Machine Learning Projects
 - Course 4: Convolutional Neural Networks
 - Course 5: Sequence Models
- **MACHINE LEARNING SPECIALIZATION** by *DeepLearning.AI & Stanford University* (March 2023)
 - Course 1: Supervised Machine Learning: Regression and Classification
 - Course 2: Advanced Learning Algorithms
 - Course 3: Unsupervised Learning, Recommenders, Reinforcement Learning
- **MULTIDISCIPLINARY PROGRAM IN DATA, PROGRAMMING AND ARTIFICIAL INTELLIGENCE** by *Buenos Aires University - Innovation and Artificial Intelligence Laboratory* (Argentina)
 - Course 1: Data Governance (January 2022)
 - Course 2: Artificial Intelligence Governance (March 2022)
 - Course 3: Design and Deployment of Artificial Intelligence (August 2022)
- **TRAINING COURSE ON SPACE TECHNOLOGY FOR BOLIVIA**, *Wuhan Research Institute of Posts and Telecommunications* (China), September 2022
- **R AND GIS (Programming in R for management of Geographic Information Systems)** by *MAPPINGGIS – QGIS Sponsors and Certified Training Institution* (Spain), October 2020
- **REMOTE SENSING IN QGIS (Processing information from satellite imagery)** by *MAPPINGGIS – QGIS Sponsors and Certified Training Institution* (Spain), July 2019
- **DYNAMIC STOCHASTIC GENERAL EQUILIBRIUM MODELS** by the International Monetary Fund, July 2018
- **IMPACT EVALUATION OF SOCIAL POLICIES** by *Abdul Latif Jameel Poverty Action LAB – J-PAL*, October 2014



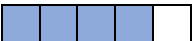



Academic References

WILLIAMS COLLEGE, Massachusetts, USA

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- Professor **PETER MONTIEL**
Department of Economics and Center for Development Economics
pmontiel@williams.edu +1 413-597-2103



Software & Languages

- Python 
- R 
- QGIS 
- Stata 
- Latex 
- Spanish (native) 
- English 