Osmar Bolivar Rosales

Economist

La Paz, Bolivia

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osmar.economics@gmail.com; osmar.jsmpf@gmail.com

Economist with expertise in economic research, policy analysis, and data-driven decision-making. Skilled in leading AI-driven projects and applying advanced econometric methods to macro and microeconomic analysis. Proven ability to conduct socio-economic assessments and design data governance frameworks. Committed to evidence-based policy-making and sustainable development. Experienced in collaborating with international organizations and providing technical insights for public policy.

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 | Public Policy

Work History

Lead Specialist in AI for Economic Research [02/2024 – Current]
MINISTERIO DE ECONOMÍA Y FINANZAS PÚBLICAS, Bolivia

- Lead the design and implementation of AI projects focused on economic research, providing insights for evidence-based decision-making in areas such as economic growth, inflation, welfare, and others.
- Spearhead the establishment of a comprehensive data governance framework, optimizing ETL processes, data visualization, and business intelligence to enhance ministry-wide efficiency and productivity.
- Develop predictive models and advanced analytics to inform policy decisions, improving the ministry's responsiveness to economic challenges.

Lead Researcher [05/2021 – 02/2024]
MINISTERIO DE ECONOMÍA Y FINANZAS PÚBLICAS, Bolivia

- Conducted in-depth assessments of socioeconomic phenomena and public policies, utilizing advanced econometric methods and machine learning algorithms.
- Delivered critical technical inputs directly to the Minister of Economy, influencing key policy decisions.
- Authored research articles for "Cuadernos de Investigación Económica Boliviana," contributing to the academic and policy discourse on economic issues.

Consultant - Economic Integration in Latin America Project [2020 –2021]
DEVELOPMENT BANK OF LATIN AMERICA (CAF)

- Developed research assessing the impact of transport infrastructure on economic growth in Bolivia, Ecuador, and Paraguay, using econometric methods and remote sensing data from satellite imagery.
- Provided empirical evidence and policy recommendations for regional economic integration efforts.

Economist - Economic Modelling [08/2017 – 02/2021]
UNIDAD DE ANÁLISIS DE POLÍTICAS SOCIALES Y ECONÓMICAS (UDAPE), Bolivia

- Led research initiatives on socioeconomic policies and macroeconomic analysis, developing sophisticated statistical and econometric models.
- Collaborated with international organizations, including CAF and the United Nations Population Fund, to publish studies and reports.
- Provided comprehensive economic forecasts and analyses, supporting policy formulation and implementation.

Consultant - Strengthening Economic Development Research in Bolivia [2019]
DEVELOPMENT BANK OF LATIN AMERICA (CAF)

- Conducted research using spatial econometric techniques to evaluate the effectiveness of local-level public investment and its externalities.
- Generated actionable insights for enhancing the efficiency of decentralization policies in Bolivia.

Researcher [01/2015 – 08/2016]
MINISTERIO DE ECONOMÍA Y FINANZAS PÚBLICAS, Bolivia

- Conducted rigorous econometric analyses of socioeconomic policies, providing essential technical inputs for policy-making.
- Published research findings in "Cuadernos de Investigación Económica Boliviana," contributing to the understanding of Bolivia's economic landscape.

Economist - Real Sector of the Economy [04/2013 – 12/2014]
UNIDAD DE ANÁLISIS DE POLÍTICAS SOCIALES Y ECONÓMICAS (UDAPE), Bolivia

- Researched the real sector of the economy, analyzing data and trends to support economic planning and policy development.
- Conducted theoretical and statistical analyses to inform policy decisions regarding Bolivia's economy.

Economist - Fiscal Sector of the Economy [10/2012 – 12/2012]
UNIDAD DE ANÁLISIS DE POLÍTICAS SOCIALES Y ECONÓMICAS (UDAPE), Bolivia

Analyzed fiscal sector data, preparing reports and analytical documents to support economic policy development.

Technical Assistant - Fiscal Sector of the Economy [09/2011 – 09/2012]
UNIDAD DE ANÁLISIS DE POLÍTICAS SOCIALES Y ECONÓMICAS (UDAPE), Bolivia

Managed databases and prepared statistical reports on the fiscal sector, supporting the formulation of fiscal policy.

Education/Teaching

EDUCATION:

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

TEACHING:

- **Professor – Fiscal Sector [2024]**
  Master in Applied Economics and Public Policy
  UNIVERSIDAD ANDINA SIMÓN BOLIVAR

Papers

PEER-REVIEWED JOURNAL ARTICLES:

— 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). **"Inflation Expectations: Dynamics and Effects for South America"**. *Cuadernos de Investigación Económica Boliviana*, 6(1): 3-24.

— Bolivar, O. (2022). **"Fiscal Multipliers: Empirical Evidence for a Cost-Effective Allocation of Public Investment"**. *Cuadernos de Investigación Económica Boliviana*, 5(2): 1-28.

— Bolivar, O. (2021). **"Boyanza Tributaria: Relación con la sostenibilidad fiscal y estabilizadores automáticos"**. *Cuadernos de Investigación Económica Boliviana*, 4(2): 53-95.

— Bolivar, O. (2016). **"Bolivianization (De-dollarization) 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.

CHAPTERS IN BOOKS:

— Bolivar, O. & Mendez, C. (2024). **"Predicting community-level poverty in Bolivia: Insights from satellite imagery, census data, and spatial modeling"**. Nagoya University, *Revisiting the Poverty-Growth-Inequality Triangle in the Post-Pandemic Era (in progress)*. Japan: Routledge – Taylor & Francis Group.

— 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, Osmar Bolivar (Ed.), *Evaluación de impacto de la infraestructura vial en Bolivia (págs. 11-70)*. La Paz, Bolivia.

— Bolivar, O. & Ugarte, D. (2020). **"Evaluación de impacto de la infraestructura vial sobre las condiciones socioeconómicas de la población"**. CAF-UDAPE, Osmar Bolivar (Ed.), *Evaluación de impacto de la infraestructura vial en Bolivia (pp. 71-117)*. La Paz, Bolivia.
— Ugarte, D. & Bolivar, O. (2019). **"Descentralización en Bolivia: Eficacia y externalidades"**. CAF-INESAD-ABCE & Beatriz Muriel (Ed.), *Investigaciones para el Desarrollo Económico de Bolivia (pp. 113-168)*. La Paz, Bolivia.

WORKING PAPERS:

— Bolivar, O. (2024). **"Weekly Inflation Forecasting: A Two-Step Machine Learning Methodology"**. *Available at SSRN*.
— Bolivar, O. & Huanto, C. (2024). **"Geopolitical Risk Shocks: Macroeconomic Effects in Bolivia, Chile, and Peru"**. *Available at SSRN*.
— 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). **"Dinámica Inflacionaria, Crecimiento Económico y Empleo en los contextos de pandemia y pospandemia para América del Sur"**. *First Place in the Call for Papers: 2022 Meeting of Economists of Bolivia - Central Bank of Bolivia.*
— Bolivar, O. (2022). **"Roads illuminate development: Using nightlight luminosity to assess the impact of transport infrastructure"**. *Research Department Working Papers 1910, CAF*.
— Bolivar, O. (2017). **"Desdolarización en Bolivia: Interacción con la Política Monetaria y el Tipo de Cambio"**. *Call for Papers: 2017 Meeting of Economists of Bolivia - Central Bank of Bolivia*.

Acknowledgements

- **First Place - 2023 Central Bank Award by the Center for Latin American Monetary Studies (CEMLA)** for the research "GDP Nowcasting: A Machine Learning and Remote Sensing Data-Based Approach for Bolivia."
- **First Place - 2022 Meeting of Economists of Bolivia by the Central Bank of Bolivia** for the research "Dinámica Inflacionaria, Crecimiento Económico y Empleo en los Contextos de Pandemia y Pospandemia para América del Sur."
- **Finalist and Funding - Research Proposal Call "Integration in Latin America: The Role of Regulations, Administrative Procedures, and Physical Infrastructure" by the Development Bank of Latin America (CAF)** for the research "Roads Illuminate Development: Using Nightlight Luminosity to Assess the Impact of Transport Infrastructure."
- **Winner and Funding - Research Proposal Call "Research on Economic Development in Bolivia" by the Development Bank of Latin America (CAF)** for the research "Descentralización en Bolivia: Eficacia y Externalidades."
- **First Place - 2015 Meeting of Economists of Bolivia by the Central Bank of Bolivia** for the research "La Relación Precio del Petróleo y Crecimiento Económico en Bolivia: El Rol de la Política Económica."

Certifications Courses

- **DEEP LEARNING SPECIALIZACTION** — *DeepLearning.AI* **[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 SPECIALIZACTION** — *DeepLearning.AI & Stanford University* **[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** — *Buenos Aires University - Innovation and Artificial Intelligence Laboratory,* Argentina **[2022]**
  - Course 1: Data Governance
  - Course 2: Artificial Intelligence Governance
  - Course 3: Design and Deployment of Artificial Intelligence

- **TRAINING COURSE ON SPACE TECHNOLOGY FOR BOLIVIA** — *Wuhan Research Institute of Posts and Telecommunications*, China **[2022]**
- **R AND GIS (Programming in R for management of Geographic Information Systems)** — *MAPPINGGIS* (QGIS Sponsors and Certified Training Institution), Spain **[2020]**
- **REMOTE SENSING IN QGIS (Processing information from satellite imagery)** — *MAPPINGGIS* (QGIS Sponsors and Certified Training Institution), Spain **[2019]**
- **DYNAMIC STOCHASTIC GENERAL EQUILIBRIUM MODELS** — International Monetary Fund **[2018]**
- **IMPACT EVALUATION OF SOCIAL POLICIES** — *Abdul Latif Jameel Poverty Action LAB – J-PAL* **[2014]**

Academic References

WILLIAMS COLLEGE, Massachusetts, USA

- Professor **PETER PEDRONI**
  Department of Economics and Center for Development Economics
  ppedroni@williams.edu +1 413-597-2449
- Professor **PETER MONTIEL**
  Department of Economics and Center for Development Economics
  pmontiel@williams.edu +1 413-597-2103

Programming, Softwares & Languages

- Python
- R
- QGIS
- Stata
- MATLAB (Dynare)
- Latex (Overleaf)
- Spanish (native)
- English