

Kathleen Salazar Serna

Contact Information

✉ kgsalaza@gmail.com , kgsalaza@unal.edu.co
 ☎ +57 317 666 67 17
 in <https://www.linkedin.com/in/kathleen-salazar>

Research gate:
<https://www.researchgate.net/profile/Kathleen-Salazar-Serna>
 ORCID: <https://orcid.org/0000-0003-3824-7044>

About me

Engineer with professional experience in the banking sector and a strong background in teaching at both undergraduate and postgraduate levels. My research focuses on policy modeling, complex systems analysis, simulation, agent-based modeling, and quantitative analysis to support decision-making. I am passionate about learning and actively contributing to sustainability issues.

Skills

Critical thinking
 Leadership
 Teamwork
 Adaptability
 Cross-cultural communication

Statistical Analysis
 Modeling and simulation
 Policy analysis
 Financial analysis
 Project evaluation
 Project management

Software:

Python, R, NetLogo, @Risk, RiskSimulator, Statgraphics, LaTeX, Tableau, GitHub

Languages:

Spanish – Native
 English- Full professional

Awards and Honors

Fulbright scholarship for Colombian visiting scholars in U.S. Fulbright Commission 2022-2023.
 Scholarship Doctoral Student. Minciencias 2022.
 Academic Excellence Award. Universidad Nacional de Colombia 2022-I.
 Best in session award. Global Conference on Business and Finance 2019.
 Cum Laude Degree in Management Engineering 2007
 Academic Excellence Award 2005- II and 2002-II.
 Universidad Nacional de Colombia

Education

Bachelor degree

Management Engineer

Universidad Nacional de Colombia - Sede Medellín

Cum Laude degree Res.CS-042- March 2007

Best academic performance- March 2005

Best academic performance- January 2002

Thesis title: Multi-criteria model for allocation in student residences

Postgraduate degrees

PhD candidate at the Department of Computing Sciences and Decisions

Universidad Nacional de Colombia - Sede Medellín

March 2021– June 2025

Dissertation Title: Assessing Transport Policies in Developing Countries using Agent-Based Modeling

Master of Finance

Universidad ICESI- Cali, Colombia

November 2014

International internship

University of Würzburg, Germany

March to October- 2014

Thesis title: Business Plan for Olfactory Marketing Entrepreneurship

Professional Certificate in Projects' Planning and Appraisal

Universidad de Antioquia- Medellín, Colombia

March 2010

Thesis title: Financial Evaluation Model for Transport Operations in a Cosmetics Factory

Professional Experience

Assistant Professor – Pontificia Universidad Javeriana Cali. School of Engineering and Sciences.	Apr 2017- Present
Visiting Research Fellow - Center for Computational Analysis of Social and Organizational Systems (CASOS). Carnegie Mellon University.	Jan-Jul 2023
Visiting Research Fellow - Center for Behavior, Institutions and the Environment (CBIE). Arizona State University.	Aug 2022- Jan 2023
Undergraduate Program Director of Financial Engineering. Universidad EIA (Escuela de Ingeniería de Antioquia).	Jun 2016- Mar 2017
Undergraduate Program Director of Management Engineering. Universidad EIA (Escuela de Ingeniería de Antioquia).	Jan 2015- Jun 2016
Leasing Specialist – Southwest Colombian Region. Banco de Bogotá.	Aug 2013- Jan 2015
Consulting Project Manager. Ankara Solutions Consulting S.A.	May-Aug 2013
Senior Consultant. Ankara Solutions Consulting S.A.	Feb 2012- May 2013
Machinery and Equipment Leasing Specialist (In charge). Leasing Bancolombia S.A.	Jun- Dec 2011
Commercial Analyst. Leasing Bancolombia S.A.	Feb 2010- Feb 2012
Commercial Assistant. Renting Colombia S.A.	Feb 2008- Jan 2010
Management Assistant. Renting Colombia S.A.	Feb 2007- Feb 2008

Teaching Experience

Undergraduate Courses

- Costs Engineering. Pontificia Universidad Javeriana Cali. Jul 2017- Present
- Financial Engineering. Pontificia Universidad Javeriana Cali. Jul 2019- Present
- Final Project Formulation. Universidad ICESI Cali. Jan – Dec 2020
- Project Analysis. Pontificia Universidad Javeriana Cali. Jul 2017- Jun 2018
- Project Seminar. Universidad EIA (Escuela de Ingeniería de Antioquia). Jul 2015-Dec 2016
- Project Formulation and Evaluation. Universidad EIA (Escuela de Ingeniería de Antioquia). Jan- Dec 2016
- Introduction to Engineering. Universidad EIA (Escuela de Ingeniería de Antioquia). Jan 2015-Dec 2016
- Engineering Project I. Universidad EIA (Escuela de Ingeniería de Antioquia). Jun 2015-Dec 2016
- Simulation and Computational Tools. Universidad de Medellín. Jul-Dec 2011
- Project Appraisal. Universidad de Antioquia. Jun 2010-Jan 2011.
- Introduction to Corporate Finance. Universidad Nacional de Colombia. Jul-Dec 2010.

Postgraduate Courses

- Advanced Financial Engineering. Master of Sciences in Engineering. Pontificia Universidad Javeriana Cali. 2018- Present
- Thesis Formulation. Master of Sciences in Chemical Products Formulation. Universidad ICESI Cali. Jan-Jun 2020.
- Financial Simulation. Financial Management Postgraduate Course. Universidad Católica de Oriente. 2011-2016
- Financial Planning. Financial Management Postgraduate Course. Universidad Católica de Oriente. 2011-2013
- Financial Simulation. Finance and Capital Market Postgraduate Course. Universidad de Medellín. 2011-2012
- Analysis of Financial Risk. Professional Education. Universidad de Medellín Sept-Oct 2015
- Financial Simulation with @Risk. Professional Education. Universidad de Antioquia Oct- Nov 2015

Publications

- Salazar-Serna, K., Cadavid, L., Franco, C.J., Carley, K.M. (2023). Simulating Transport Mode Choices in Developing Countries. In Lecture Notes in Computer Science, vol 14161. Springer, Cham. https://doi.org/10.1007/978-3-031-43129-6_21
- Muñoz-Vélez MF, Salazar-Serna K, Escobar-Torres D, Rojas-Manzano MA. Circular Economy: Adding Value to the Post-Industrial Waste through the Transformation of Aluminum Dross for Cement Matrix Applications. Sustainability. 2023; 15(18):13952. <https://doi.org/10.3390/su151813952>
- Cadavid, L., Salazar-Serna, K. Mapping the Research Landscape for the Motorcycle Market Policies: Sustainability as a Trend- A Systematic Literature Review. Sustainability Journal, Sep-2021 [DOI:10.3390/su131910813](https://doi.org/10.3390/su131910813)
- Cadavid, L., Salazar-Serna, K., Valencia A., Franco, C.J. The cities and the sun. Grid parity in Colombian households with photovoltaic systems. ACE: architecture, city and environment. Jun-2020. [DOI:10.5821/ace.15.43.8772](https://doi.org/10.5821/ace.15.43.8772)

Conferences

- Modeling urban transport choices: incorporating sociocultural aspects. Winter Simulation Conference 2024. December, 15- 18, 2024. Orlando, U.S.A.
- Unveiling Transport Dynamics in Developing Countries, a Data-Driven Agent-Based Modeling Approach. 17th International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction and Behavior Representation in Modeling and Simulation. September 18-20 2024. Pittsburgh, Pennsylvania, U.S.A.
- Analyzing transport policies in developing countries with ABM. In Proceedings of Annual Modeling and Simulation Conference (ANNSIM). May 22-25, 2024. Washington D.C., USA.
- Understanding Transport Mode Choices in Developing Urban Contexts: A Machine Learning and Agent-Based Simulation Approach International Conference 2024 INFORMS/ALIO/ASOCIO. June 16-19, 2024. Medellín, Colombia.
- Simulating the social influence in transport mode choices. Winter Simulation Conference 2023. December 10- 13, 2023. San Antonio Texas, U.S.A.
- Are motorcycles a solution or a problem for urban mobility? 2023 IISE Annual Conference & Expo. May 2023. New Orleans, Louisiana, U.S.A.
- Modeling with empirical data from Colombian cities: Experiences with a travel mode choice model. 4th IASC Workshop Behavior Institutions and the Environment. CBIE Center Arizona State University. March 2023. Tempe, Arizona, U.S.A.
- Policy Modeling in Developing Countries: Experiences from Colombia. 2022 Annual Conference of the Computational Social Science Society of the Americas. October 2022. Santa Fe, New Mexico, U.S.A.
- Feasibility study of a sustainable housing project from a builder's perspective. 2022 IISE Annual Conference. May 2022. Seattle, U.S.
- Design and economic valuation of dwellings with a photovoltaic system. 2020 IISE Annual Conference. June 2020. New Orleans, U.S.
- Financial indicators for residential photovoltaic systems evaluation. Global Conference on Business and Finance. January 2019. Las Vegas, Nevada. U.S.
- Navegar, escribir y aprender en un curso de ingeniería. International meeting of education on engineering ACOFI – 2° Latinamerican Congress on Engineering. September 2019. Cartagena de Indias. Colombia.

Grants and Fellowships

- 2023 Call for Strengthening Research Capacities. Research Fund of the WWB Foundation [190-2023]. Principal Investigator: "Analysis of mobility dynamics, a challenge for devising gender-based policies."
- Minciencias Colombia 2022 Call for the Incorporation of Young Researchers and Innovators in the Regions. Project funded by the Science, Technology, and Innovation Fund of the SGR BPIN [2022000100068]. Principal Investigator: "Analysis of urban mobility dynamics on motorcycles in Cali city for the definition of public policies and environmental management." 2022-2023.
- International Academic Mobility Grant. Alianza del Pacífico- Agencia de Cooperación Internacional. Chile Jun- Jul 2018
- Pontificia Universidad Javeriana inside research grant [2018-1007]. Principal Investigator: Effectiveness evaluation of preventive strategies in construction projects with Agent Based Modeling. Universidad Javeriana Bogotá, Universidad Nacional de Colombia and Constructora Bolívar S.A.

Leadership and Activities

- Member of the Ibero-American Network of Computational Social Sciences (REDICISCO). June 2024 - Present.
- Member of the Professional Association for the Decision and Data sciences (INFORMS). June 2023- Present.
- Member of the National Academic Network of Mobility (RAM), Colombia. June 2023 - Present.
- Member of the Curricular Committee of Industrial Engineering Program. 2017- Present.
- Selection Committee Member for Fulbright U.S. Student Researcher Scholarships 2024.
- Selection Committee Member for Fulbright Hubert H. Humphrey Scholarships 2023.
- Member of the Institute of Industrial and Systems Engineers IISE and Faculty advisor for students' chapter. 2019- 2022.
- Project Manager Auto-assessment for high quality national certification for undergraduate programs- Industrial Engineering 2018-2020.
- Student Representative on Curricular Committee of Management Engineering Program in 2005.
- AIESEC Universidad Nacional de Colombia Chapter EIA – Marketing and Communications Coordinator 2006. National Conference Facilitator January 2005. Sales and Organizational Relationships Team member 2004.