

Alex Barrales Araneda

M.Sc. IN INDUSTRIAL ENGINEERING · UNIVERSITY OF BÍO-BÍO

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Education

M.Sc. in Industrial Engineering

UNIVERSITY OF BÍO-BÍO

Concepción, Chile

2019 - 2022

Industrial Engineer

UNIVERSITY OF BÍO-BÍO

Concepción, Chile

2013 - 2020

Bachelor of Engineering Science

UNIVERSITY OF BÍO-BÍO

Concepción, Chile

2013 - 2017

Research Project

FONDEF ID20I10230, University of Bío-Bío

RESEARCH ASSISTANT

- Support in the mathematical formulation of an IPM model concerning the search for criminal groups.

Concepción, Chile

Nov. 2021 - Mar. 2023

Project 2160285 GI/EF, University of Bío-Bío

RESEARCH ASSISTANT

- Project 2160285 GI/EF: "Location, Transport and urban distribution Research Group".

Concepción, Chile

Mar. 2022 - Sep. 2022

FONDECYT 1181036, University of Chile

RESEARCH ASSISTANT

- Develop and implement algorithms for the detection of dynamic communities in crime social networks.

Concepción, Chile

Mar. 2021 - Mar. 2022

Project UBB 2155, University of Bío-Bío

RESEARCH ASSISTANT

- Processing of public databases of the Ministry of Transportation and Telecommunications.

Concepción, Chile

Jun. 2021 - Dic. 2021

Project ING 2030 I+D 20-45, University of Bío-Bío

RESEARCH ASSISTANT

- Collaboration in the formulation and implementation of an MIP model for the SBRP.

Concepción, Chile

Ago. 2020 - Mar. 2021

Spatial Economics Laboratory, University of Bío-Bío

RESEARCH ASSISTANT

- Project AT 17-47: "Sustainable mobility plan for the metropolitan area of Concepción".

Concepción, Chile

May. 2018 - Ago. 2018

Past positions

Linear Optimization, University of Bío-Bío

TEACHING ASSISTANT

- Industrial Engineering Department, University of Bío-Bío

Concepción, Chile

Sep. 2019 - Dic. 2019

Network Optimization, University of Bío-Bío

TEACHING ASSISTANT

- Industrial Engineering Department, University of Bío-Bío

Concepción, Chile

Mar. 2019 - Ago. 2019

Integer Linear Programming, University of Bío-Bío

TEACHING ASSISTANT

- Industrial Engineering Department, University of Bío-Bío

Concepción, Chile

Sep. 2018 - Dic. 2018

Microeconomics, University of Bío-Bío

TEACHING ASSISTANT

- Industrial Engineering Department, University of Bío-Bío

Concepción, Chile

Ago. 2015 - Jul. 2016

Visiting positions

Pontificia Universidad Católica de Chile

ACADEMIC INTERNSHIP

- An academic internship supervised by PhD. Vladimir Marianov Kluge.

Santiago, Chile

Jul. 2018 - Ago. 2018

Skills

Programming Python, C/C++, Bash, JavaScript, Java

Libraries Numpy, Pandas, Matplotlib, Qt, Flask, Scikit-Learn

Scientific Software Gurobi, Cplex, AMPL, LaTeX, R

Conferences and Talks

VIII UBB Graduate Student Research Meeting.

UN MODELO DE PROGRAMACIÓN LINEAL ENTERA PARA EL GMTPL.

Concepción, Chile

Nov. 2020

XIII Chilean Congress of Operations Research, OPTIMA.

FORMULACIÓN Y SOLUCIÓN PARA EL MEDIAN TOUR PROBLEM GENERALIZADO CON TIEMPO ACUMULADO.

Santa Cruz, Chile

Nov. 2019

10th International Conference on Computational Logistics, ICCL.

FORMULATION FOR THE MEDIAN TOUR PROBLEM GENERALIZED WITH CUMULATIVE TIME.

Barranquilla, Colombia

Sep. 2019

Honors and awards

2022 **Industrial Engineering Department Award**, Industrial Engineering Department, University of Bío-Bío

Concepción, Chile

2017 **1st Place**, Ranking of Academic Performance, Faculty of Engineering

Concepción, Chile

2017 **1st Place**, National Final Hackathon 2017 Y4PT, Active Mobility Challenge

Santiago, Chile

2017 **3rd Place**, Regional Final Hackathon 2017 Y4PT

Concepción, Chile

Other international conferences and talks

2022	R. Riffo-Sandoval , C. Obreque, G. Latorre-Nuñez, P. Álvarez , A. Barrales-Araneda, C. Bizama. El problema del ruteo de un furgón escolar, generalizado, selectivo, con carga mixta y ventanas de tiempo. CLAIO 2022	Buenos Aires, Argentina
2022	N. Villanueva , C. Obreque, G. Latorre-Nuñez, P. Álvarez , A. Barrales-Araneda, C. Bizama. The Multiperiod Set Team Orienteering Problem with Time Windows. CLAIO 2022	Buenos Aires, Argentina
2022	M. Villagra-Aguayo , C. Obreque, G. Latorre-Nuñez, P. Álvarez , A. Barrales-Araneda, C. Bizama. El problema del ruteo de furgones escolares selectivo, con carga mixta, flota heterogénea y ventanas de tiempo. CLAIO 2022	Buenos Aires, Argentina
2022	C. Obreque , G. Latorre-Nuñez, P. Álvarez , A. Barrales-Araneda, C. Bizama, M. Villagra-Aguayo. Ruteo de furgones escolares selectivo, con carga mixta, flota homogénea y transbordo. CLAIO 2022	Buenos Aires, Argentina
2022	F. Troncoso , R. Weber, A. Barrales-Araneda. Finding Criminal Groups in Suspect Networks Using a Steiner Tree Approach. EURO 2022	Espoo, Finland