Alex **Barrales Araneda**

M.Sc. in Industrial Engineering · University of Bío-Bío

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Education

M.Sc. in Industrial Engineering	*Concepción, Chile*
University of Bío-Bío	*2019 - 2022*

Industrial Engineer	*Concepción, Chile*
University of Bío-Bío	*2013 - 2020*

Bachelor of Engineering Science	*Concepción, Chile*
University of Bío-Bío	*2013 - 2017*

Research Project

FONDEF ID20I10230, University of Bío-Bío — *Concepción, Chile*
Research Assistant — *Nov. 2021 - Mar. 2023*
- Support in the mathematical formulation of an MIP model concerning the search for criminal groups.

Project 2160285 GI/EF, University of Bío-Bío — *Concepción, Chile*
Research Assistant — *Mar. 2022 - Sep. 2022*
- Project 2160285 GI/EF: "Location, Transport and urban distribution Research Group".

FONDECYT 1181036, University of Chile — *Concepción, Chile*
Research Assistant — *Mar. 2021 - Mar. 2022*
- Develop and implement algorithms for the detection of dynamic communities in crime social networks.

Project UBB 2155, University of Bío-Bío — *Concepción, Chile*
Research Assistant — *Jun. 2021 - Dic. 2021*
- Processing of public databases of the Ministry of Transportation and Telecommunications.

Project ING 2030 I+D 20-45, University of Bío-Bío — *Concepción, Chile*
Research Assistant — *Ago. 2020 - Mar. 2021*
- Collaboration in the formulation and implementation of an MIP model for the SBRP.

Spatial Economics Laboratory, University of Bío-Bío — *Concepción, Chile*
Research Assistant — *May. 2018 - Ago. 2018*
- Project AT 17-47: "Sustainable mobility plan for the metropolitan area of Concepción".

Past positions

Linear Optimization, University of Bío-Bío — *Concepción, Chile*
Teaching Assistant — *Sep. 2019 - Dic. 2019*
- Industrial Engineering Department, University of Bío-Bío

Network Optimization, University of Bío-Bío — *Concepción, Chile*
Teaching Assistant — *Mar. 2019 - Ago. 2019*
- Industrial Engineering Department, University of Bío-Bío

Integer Linear Programming, University of Bío-Bío

Concepción, Chile

TEACHING ASSISTANT
Sep. 2018 - Dic. 2018
- Industrial Engineering Department, University of Bío-Bío

Microeconomics, University of Bío-Bío

Concepción, Chile

TEACHING ASSISTANT
Ago. 2015 - Jul. 2016
- Industrial Engineering Department, University of Bío-Bío

Internship

Pontificia Universidad Católica de Chile

Santiago, Chile

ACADEMIC INTERNSHIP
Jul. 2018 - Ago. 2018
- An academic internship supervised by PhD. Vladimir Marianov Kluge.

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

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*
2020	**A. Barrales-Araneda**, C. Obreque. Un modelo de programación lineal entera para el Median Tour Problem Generalizado con Tiempo Acumulado. VIII Encuentro de Investigación de Estudiantes de Postgrado UBB 2020.	*Concepción, Chile*
2019	**A. Barrales-Araneda**, C. Obreque. Formulación y solución para el median tour problem generalizado con tiempo acumulado. OPTIMA 2019	*Santa Cruz, Chile*
2019	**A. Barrales-Araneda**, C. Obreque. Formulation for the median tour problem generalized with cumulative time. ICCL 2019	*Barranquilla, Colombia*

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*