

Warley Almeida Silva

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SUMMARY

I am currently a fast-tracked Ph.D. student at Université de Montréal with a background on Computer Science. I am looking for opportunities to apply Operations Research techniques to solve complex real-world problems. I have experience with modelling and solving mixed-integer programs due to my previous and current projects. My current interests are network design, facility location, choice models, bilevel programming, and game theory.

EDUCATION

- **Université de Montréal** Montréal, Canada
Fast-tracked Ph.D. student in Computer Science (GPA: 4.15 out of 4.30) September 2020 – current
- **Universidade Federal de Juiz de Fora** Juiz de Fora, Brazil
B.Sc. degree holder in Computer Science (GPA: 88.77 out of 100.00) March 2015 – December 2019
- **Instituto Federal do Sudeste de Minas Gerais** Juiz de Fora, Brazil
Technician in Industrial Information Technology (GPA: 90.53 out of 100.00) February 2012 – December 2014

EXPERIENCE

- **Chair in Data Science for Combinatorial Game Theory** Montréal, Canada
Ph.D. student under Margarida da Silva Carvalho's orientation September 2020 - current
 - **Research on *Competitive Facility Location*:** The objective of this research is to better understand how different assumptions about the behavior of the competitors impact the decision of a company while locating facilities.
- **City hall of Juiz de Fora** Juiz de Fora, Brazil
Full-stack developer of administrative systems February 2020 - March 2021
- **MITACS Globalink Research Internship** Montréal, Canada
Research intern under Sanjay Dominik Jena's orientation July 2019 - October 2019
 - **Research on *Multi-Period Multi-Commodity Network Design*:** The objective of this research is to develop strong mixed-integer formulations for the variant where the capacity of edges may vary over the planning horizon.
- **Section of Graduate Studies and Research** Juiz de Fora, Brazil
Undergraduate research scholarship holder under Saulo Moraes Villela's orientation August 2018 - July 2019
 - **Research on *Balance techniques in multi-classification problems*:** The objective of this research is to enhance the one-against-all multi-classification approach with balancing techniques through oversampling algorithms.
- **Center of Public Policies and Evaluation of Education** Juiz de Fora, Brazil
Research intern under Jairo Francisco de Souza's orientation April 2018 - June 2019
 - **Research on *Automatic evaluation of oral skills*:** The objective of this research is to develop a software to classify oral skills of children as either good or bad through Automatic Speech Recognition (ASR) techniques.
- **Computer Science Tutorial Educational Group** Juiz de Fora, Brazil
Undergraduate research scholarship holder under Lorenza Leão Oliveira Moreno's orientation May 2016 - August 2017
 - **Research on *Information Diffusion on Social Networks*:** The objective of this research is to propose a mixed-integer formulation to optimize information diffusion and find influential individuals in a social network.

PUBLICATIONS

- Silva, W. A., Jena, S. D., & Jeswani, K. (2021). Mathematical Formulations for Multi-Period Network Design with Modular Capacity Adjustments. Manuscript in preparation.
- Silva, W. A., Carchedi, L. C., Junior, J. G., de Souza, J. V., Barrere, E., & Souza, J. F. (2021). A Framework for Large-Scale Automatic Fluency Assessment. *International Journal of Distance Education Technologies*, 19(3), 70-88.
- Silva, W. A., & Villela, S. M. (2020). Improving the one-against-all binary approach for multiclass classification using balancing techniques. *Applied Intelligence*, 1-20. <https://doi.org/10.1007/s10489-020-01805-1>.
- Gomes Jr, J., Silva, W. A., Souza, J., Barrère, E., & Souza, J. (2019, November). Uso de Alinhadores Forçados para Avaliação Automática em Larga Escala da Fluência em Leitura. In *Brazilian Symposium on Computers in Education (Simpósio Brasileiro de Informática na Educação-SBIE)* (Vol. 30, No. 1, p. 61).
- Silva, W. A., Gomes Jr, J., Knop, I., Barrère, E., & Souza, J. (2019, November). Talk2Me: Uma abordagem computacional para auxiliar na identificação de falhas no processo de alfabetização. In *Brazilian Symposium on Computers in Education (Simpósio Brasileiro de Informática na Educação-SBIE)* (Vol. 30, No. 1, p. 723).

SCHOLARSHIPS

- **CIRRELT Scholarship of Excellence for Master's Students (2021):** Financial support for master's students with an excellent academic performance, ability to conduct research, and potential for contributions to the research center.
- **MITACS Graduate Fellowship (2020):** Financial support for former MITACS Globalink Research interns.
- **Global Korean Scholarship for Latin American Students (2018):** Five-weeks long exchange program promoted by the Korean Government. Excellent opportunity to experience Korean culture, receive in-depth academic training, and develop a project on Adversarial Machine Learning under professor Dae-Ki Kang's orientation.
- **PIIGRAD Scholarship (2017):** Six-months long exchange program at Universität Passau promoted by the Brazilian Government. Great opportunity to enhance intercultural communication skills in an academic environment.
- **Youth Ambassadors Scholarship (2015):** One-month long cultural exchange program promoted by the American Embassy in Brazil. Good opportunity to learn more about American culture and do volunteer work for two weeks in Reno, Nevada. One of 50 scholarship holders among approximately 15000 applicants.

COMPETITIONS

- **First place in the AI for TSP competition :** International Joint Conference on Artificial Intelligence (2021).
- **First place in local programming marathons:** Semana da Computação (2016) and VII GETMeeting (2017).
- **Third place in regional programming marathon:** Regional Phase of the SBC Programming Marathon (2017).

SKILLS

- **Languages:** speaker of Portuguese (native), English (fluent), German (intermediary), and French (intermediary).
- **Optimization:** knowledge in search algorithms, linear and integer programming, heuristics and meta-heuristics.
- **Coding:** experience with C and C++ (9 years), PHP and SQL (7 years), Python (4 years), and Julia (1 year).
- **Technologies:** experience with IBM's CPLEX (5 years), Pandas (4 years), Gurobi (3 years), and JuMP (1 year).