

VINICIUS JAMELI

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EDUCATION

Date	Degree	Institution	Laboratory
Ongoing	PhD	University of Toronto	<u>Applied Optimization Lab</u>
2023	Bachelor's	University of Campinas	Operations Research and Optimization Lab
2017	High school	Technical School of Campinas	-

PROFESSIONAL EXPERIENCE

Period	Company	Area	Role	Activities
07/2021 - 11/2021	Unisoma	Advanced analytics	Intern	Solved optimization problems related to supply chain using AIMMS

TEACHING EXPERIENCE

Period	Institution	Activities
03/2023 - 12/2023	University of Campinas	Offered training for mathematics olympiads to middle and high school students

CONFERENCE ABSTRACTS ¹

- [4] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. "Planning IMRT with MLC: a linear approach with elastic constraints". In: *XXIX Scientific Initiation Congress of UNICAMP*. Campinas, Brazil: Galoá, Nov. 2021.
- [3] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. "Optimization of external beam radiation therapy". In: *Proceeding Series of the Brazilian Society of Computational and Applied Mathematics*. Vol. 9. Campinas, Brazil, 2022.
- [2] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. "Optimization of external beam radiation therapy". In: *Digital proceedings of the 4^o Biomathematics Meeting*. Rio de Janeiro, Brazil, Apr. 2022.
- [1] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. "Optimization of external beam radiation therapy". In: *EURO 2022 Conference Handbook and Abstracts*. ESPOO, Finland, July 2022.

CONFERENCE ABSTRACTS IN PUBLISHING PROCESS

- [1] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. "Optimization of external beam radiation therapy". In: *XXX Scientific Initiation Congress of UNICAMP*. Campinas, Brazil, Oct. 2022.

PRESENTATIONS

- [2] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. *Optimization of external beam radiation therapy*. 3^o Optimization Workshop. Botucatu, Brazil, Aug. 2022.
- [1] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. *Optimization of external beam radiation therapy*. Applied Mathematics Week (SEMAP). Campinas, Brazil, Aug. 2022.

¹Repeating titles indicate the same project at different stages of development.

ONGOING PROJECTS²

Title	Participants
<u>Primal-dual predictor-corrector interior point algorithm for the fluence map optimization</u>	Vinicius Jameli and Aurelio Ribeiro Leite de Oliveira
<i>Optimization algorithms in DAO: the first systematic literature review</i>	Mauricio Moyano, Vinicius Jameli, Keiny Meza, Gonzalo Tello, and Guillermo Cabrera-Guerrero
<i>A novel database for IMRT planning</i>	Mauricio Moyano, Vinicius Jameli, and Keiny Meza

OTHER PROJECTS

Year	Title	Summary
2023	Hospital collaboration	The radiotherapy planning framework of the hospitals <i>Boldrini</i> , <i>CAISM</i> , and <i>HC - UNICAMP</i> were carefully studied, aiming to establish the first steps towards the implementation of external inverse planning tools in their <i>TPS</i>
2022	Data structures	Data structures, such as binary search trees, hashing, queues, linked lists, and stacks, among others, with all their respective functionalities, were implemented in C
2021	Sudoku modeling	A traditional Sudoku and some variations were modelled and solved as integer programming problems
2021	News crawler	Together with the TradeMap engineers' software team, a news crawler was developed specifically for the TradeMap mobile app
2020	Matrix envelope	A matrix envelope algorithm for sparse matrices was developed in Matlab, followed by a Gaussian-elimination, backward, and forward substitution algorithm for this envelope
2020	Least square	Comparisons of different approaches to the least square problem were reported and tested in a curve-fitting model of COVID-19 cases

OUTSTANDING COURSES

Year	Course	Institution
2017, 2018	Neuroscience	Albert Einstein Israel Teaching and Research Institute

FUNDING

Year	Purpose	Granted by
2023	Fully funded support for the CIMPA school <i>Mathematical Modelling and Numerical Simulation in Medicine</i> in Cuba (Declined)	Centre International de Mathématiques Pures et Appliquées (CIMPA)
2022	Travel support to present at the EURO conference in Finland	Institute of Mathematics, Statistics and Scientific Computing
2022	Travel support to present at the EncBioMat conference in Rio de Janeiro	Institute of Mathematics, Statistics and Scientific Computing
2022	Travel support to present at the Optimization Workshop conference in Botucatu	National Council for Scientific and Technological Development
2020-2023	Research grant	National Council for Scientific and Technological Development

²The authors expect to submit all projects for publication in 2024.

AWARDS

Year	Award title	Awarded by	Terms of award
2023	<u>Beatriz Neves Award</u>	Brazilian Society of Applied and Computational Mathematics (SBMAC)	Second best research project in applied mathematics at undergraduate level
2022, 2023	<u>Best research project</u>	Institute of Mathematics, Statistics and Scientific Computing	Best research project in applied mathematics at undergraduate level
2017	Gold medal	Association Internationale Mathématiques sans Frontières	Received at the International Olympics Mathématiques sans Frontières
2014	Silver medal	Brazilian Astronomical Society	Received at the 17 ^o Brazilian Astronomy and Astronautics Olympiad

LANGUAGES

Idiom	Proficiency level	Certificate
Portuguese	Native	-
English	C1	TOEFL - 107/120
Spanish	A2	-

ACADEMIC REFERENCES

Name	Position	Institute	Contact
Kelly Cristina Poldi	Associate professor	IMECC	kelly@ime.unicamp.br
Aurelio Ribeiro Leite de Oliveira	Full professor	IMECC	aurelio@po.ime.unicamp.br
Paulo José da Silva e Silva	Full professor	IMECC	pjssilva+unicamp@gmail.com
Guillermo Cabrera-Guerrero	Associate professor	Escuela de Ingeniería Informática - PUCV	guillermo.cabrera@pucv.cl

PROFESSIONAL REFERENCES

Name	Position	Company	Contact
Juliana Simões Lepsch	Partner and executive manager	Unisoma	juliana.simoes@unisoma.com
Camila Salles	Product owner	Unisoma	camila_2172@hotmail.com