

VINICIUS JAMELI

📍 University of Toronto, Canada

🏛️ MIE - Department of Mechanical & Industrial Engineering

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EDUCATION

Year	Degree	Institution	Area	Supervisor
Ongoing	Ph.D	University of Toronto	Operations Research	<u>Timothy C. Y. Chan</u>
2023	B.Sc., Hons	University of Campinas	<u>Applied Mathematics</u>	Aurelio R. L. Oliveira

PROFESSIONAL EXPERIENCE

Period	Company	Area	Role	Activities
07/2021 - 11/2021	Unisoma	Advanced analytics	Intern	Studied, modeled, and solved large-scale 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

- [5] 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.
- [4] 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.
- [3] Vincius Jameli Cabrera and Aurelio Ribeiro Leite de Oliveira. “Optimization of external beam radiation therapy”. In: *Digital proceedings of the 4° Biomathematics Meeting*. Rio de Janeiro, Brazil, Apr. 2022.
- [2] 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.
- [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° 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 PROJECTS

Title	Participants
<i>Magnet design for MRI-Linacs</i>	Vinicius Jameli, Teodor Stanescu, and Koen Vat
<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

UNDERGRADUATE PROJECTS

Year	Theme	Summary
2023	Thesis	Entitled <i>Primal-dual interior point algorithm for the fluence map optimization problem</i> , the work develops an interior point algorithm for a classical linear formulation of the FMO problem.
2023	Case study	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.

FUNDING

Year	Purpose	Granted by
2024	Base funding package for Ph.D students	Department of Mechanical & Industrial Engineering
2023	Fully funded support for the CIMPA school <i>Mathematical Modelling and Numerical Simulation in Medicine</i> in Cuba	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

AWARDS

Year	Award title	Awarded by	Terms of award
2023	<u>Beatriz Neves Award</u>	Brazilian Society of Applied and Computational Mathematics (SB-MAC)	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 in both years.
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 (2023)
Spanish	A2	-

ACADEMIC REFERENCES

Name	Position	Institution	Email
Timothy C. Y. Chan	Associate Professor	University of Toronto	tcy.chan@utoronto.ca
Teodor Stanescu	Associate professor	University of Toronto	teodor.stanescu@uhn.ca
Aurelio R. L Oliveira	Full professor	University of Campinas	aurelio@po.ime.unicamp.br

PROFESSIONAL REFERENCES

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