

Thiago Serra

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Last update: October 6, 2018

EDUCATION

Ph.D.	<i>Operations Research</i>	Carnegie Mellon University	2018	Advisor: J. Hooker
	♦	Gerald L. Thompson Dissertation Award in Management Sciences		
M.S.	<i>Operations Research</i>	Carnegie Mellon University	2015	
M.S.	<i>Computer Science</i>	University of Sao Paulo	2012	Advisor: Y. Wakabayashi
B.S.	<i>Computer Engineering</i>	University of Campinas	2008	Advisor: A. V. Moura
	♦	SBC Outstanding Student Award, IE Award, CREA Honorable Mention		
Certificate of Studies Abroad		IST, University of Lisbon	2007	

WORK EXPERIENCE

2018–2019	<i>Visiting Research Scientist</i>	Mitsubishi Electric Research Labs, USA
2017	<i>Summer Intern</i>	Mitsubishi Electric Research Labs, USA
2016	<i>Summer Intern</i>	Mitsubishi Electric Research Labs, USA
2009–2013	<i>Operations Research Analyst</i>	PETROBRAS, Brazil
2008–2009	<i>Operations Research Analyst</i>	Neolog Consulting, Brazil
2008	<i>Software Engineer</i>	Metacortex Consulting, Brazil
2007	<i>Software Engineering Intern</i>	Daitan Labs, Brazil
2003–2004	<i>R&D Intern</i>	Fiberwork Optical Communications, Brazil

PUBLICATIONS

T. Serra, C. Tjandraatmadja, and S. Ramalingam
“*Bounding and Counting Linear Regions of Deep Neural Networks*”
ICML 2018
♦ Princeton Day of Optimization Best Poster Award: Optimization and Machine Learning

A. Raghunathan, D. Bergman, J. Hooker, T. Serra, and S. Kobori
“*The Integrated Last-Mile Transportation Problem (ILMTP)*”
ICAPS 2018

T. Serra, C. Tjandraatmadja, and S. Ramalingam
“*How Could Polyhedral Theory Harness Deep Learning?*”
Scientific Machine Learning Workshop, U.S. Department of Energy, 2018

T. Serra, G. Nishioka, and F. Marcellino
“*The Offshore Resources Scheduling Problem: Detailing a Constraint Programming Approach*”
CP 2012

S. Barcelos, T. Serra, R. Rando, E. Rigon, N. Sasaki, W. Arellano, A. Alkschbirs, and D. Lima
“*Polarization Mode Dispersion (PMD) Field Measurements: Audit of Newly Installed Fiber Plants*”
NFOEC 2005

Under Review

T. Serra and S. Ramalingam
“*Empirical Bounds on Linear Regions of Deep Rectifier Networks*”
Submitted to ICLR 2019

T. Serra and J. Hooker
“*Compact Representation of Near-Optimal Integer Programming Solutions*”
Submitted to Mathematical Programming; second round

E. Balas and T. Serra
“*When Lift-and-Project Cuts are Different*”
Submitted to INFORMS Journal on Computing; first round

T. Serra
“*Reformulating the Disjunctive Cut Generating Linear Program*”
Submitted to Annals of Operations Research; first round
♦ INFORMS 2016 Annual Meeting Interactive Presentation Award First Place Winner

A. Raghunathan, D. Bergman, J. Hooker, T. Serra, and S. Kobori
“*Seamless Multimodal Transportation Scheduling*”
Submitted to Transportation Science; first round

Working Papers

T. Serra
“*Branching with Less Repetition*”

Patents

A. Raghunathan, D. Bergman, and T. Serra
“*Systems and Methods for Joint Control of Multi-Modal Transportation Networks*”
U.S. Patent Application 15/785,540, filed October 2017 (pending)

AWARDS AND HONORS

2018 Carnegie Mellon Univ. Gerald L. Thompson Doctoral Dissertation Award in Management Science
2018 Princeton Day of Optimization Best Poster Award: Optimization and Machine Learning
2016 INFORMS Judith Liebman Award
2016 INFORMS Annual Meeting Interactive Presentation Award First Place Winner
2012 Brazilian Symposium on Operations Research Best Paper Finalist

Undergraduate

2009 Brazilian Computing Society (SBC) Outstanding Student Award
2009 Sao Paulo Institute of Engineering (IE) Award
2009 Sao Paulo Reg. Board of Engineering, Architecture, and Agronomy (CREA) Honorable Mention
2007 ACM International Collegiate Programming Contest South America Bronze Medal
2006 Portuguese National Programming Contest (MIUP) Third Place
2005 ACM International Collegiate Programming Contest South America Bronze Medal
2004 ACM International Collegiate Programming Contest South America Bronze Medal
2003 Brazilian Olympiad in Informatics Gold Medal

FELLOWSHIPS, GRANTS, AND SCHOLARSHIPS

2018	MIP Workshop Travel Support
2018	Carnegie Mellon Graduate Student Conference Funding
2017	MIP Workshop Travel Support
2017	Carnegie Mellon Graduate Student Conference Funding
2015	Tepper School of Business Dean's Fund
2013–2017	William Larimer Mellon Fellowship
2006–2007	Luso-American Development Foundation Scholarship
2004–2005	Sao Paulo Res. Fndn. Undergraduate Res. Grant
2003–2004	Sao Paulo Res. Fndn. Innovative Res. in Small Business Grant

INVITED PRESENTATIONS

May 2019	UCLA, Institute for Pure and Applied Mathematics
Oct 2018	The University of Utah, School of Computing
Oct 2018	Colby College, Mathematics and Statistics Department

Past

Jun 2018	Mitsubishi Electric Research Laboratories
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Mar 2018 Carnegie Mellon University, Process Systems Engineering
 Feb 2018 Brookhaven National Laboratory, Computational Science Initiative
 Jun 2017 Northeastern University, INFORMS Student Chapter
 May 2013 University of Campinas, IEEE Computational Intelligence Society Student Chapter

CONFERENCE PRESENTATIONS

Talks

- Scientific Machine Learning Workshop, DOE, 2018
- INFORMS Annual Meeting 2012, 2015, 2016, 2017, 2018
- INFORMS Optimization Society Conference 2016, 2018
- INFORMS Computing Society Conference 2017
- MOPTA 2016
- CP 2012
- SPARK and COPLAS workshops, ICAPS 2012
- CPAIOR 2011

Posters

- Princeton Day of Optimization, 2018
- Fundamentals of Data Analysis Summer School, IFDS Madison, 2018
- MIP 2016, 2017, 2018
- NemFest 2017
- INFORMS Annual Meeting 2016

TEACHING EXPERIENCE

Instructor

Fall 2016 *Mathematical Models for Consulting* **Carnegie Mellon University, Undergraduate**
 Registered: 25 Overall Teaching: 4.67/5.00 Overall Evaluation: 4.50/5.00

Recitation Leader

Spring 2017 *Optimization* **Carnegie Mellon University, MBA**
 Spring 2016 *Optimization* **Carnegie Mellon University, MBA**

Office Hours and Grading

Spring 2016 *Disjunctive Programming* **Carnegie Mellon University, PhD**
 Fall 2015 *Optimization* **Carnegie Mellon University, MBA**
 Fall 2015 *Applications of Operations Research* **Carnegie Mellon University, MBA**
 Fall 2006 *File Structures* **University of Campinas, Undergraduate**

TEACHING-RELATED TRAINING

<i>Future Faculty Program</i>	Eberly Center, Carnegie Mellon University	2014–2017
<i>Teaching Effectiveness Colloquium</i>	INFORMS	2017
<i>Teaching Effectiveness Colloquium</i>	INFORMS	2016
<i>Acting for Non-Majors</i>	School of Drama, Carnegie Mellon University	2015
<i>Language and Culture for Teaching</i>	ICC, Carnegie Mellon University	2013

ACADEMIC SERVICE

Session Chair

“*Machine Learning and Discrete Optimization*”

- 2018 INFORMS Annual Meeting

“*New Paradigms for Cut Generation*”

- 2018 INFORMS Optimization Society Conference
- 2017 INFORMS Computing Society Conference
- 2016 INFORMS Optimization Society Conference

“*Decision Diagrams for Optimization*”

- 2017 INFORMS Annual Meeting

“*Applications in the Energy Sector of Emerging Countries*”

- 2012 INFORMS Annual Meeting

Journal Peer Review

- Annals of Operations Research
- Constraints

Proceedings Peer Review

- AAAI-17
- CP 2016, 2017
- CPAIOR 2017, 2018

Volunteering and Leadership

2018–	<i>Committee Member</i>	INFORMS Undergrad. Operations Research Prize
2017–	<i>Member</i>	INFORMS Education Strategy Committee
2017–2018	<i>Consulting Board Member</i>	CMU INFORMS
2015–2017	<i>President</i>	CMU INFORMS
		◆ 2017 INFORMS Student Chapter Award: Magna Cum Laude
		◆ 2016 INFORMS Student Chapter Award: Summa Cum Laude
		◆ 2016 INFORMS Judith Liebman Award

2014–2015	<i>Co-Founder; Secretary</i>	CMU INFORMS
2015	<i>Twitter Curator</i>	ISMIP
2012–	<i>Contributor</i>	INFORMS Annual Meeting Blog

LANGUAGES

Portuguese	(native)
English	(fluent)

PROFESSIONAL MEMBERSHIPS

2012–	INFORMS
2015–	SIAM

REFERENCES

Available upon request.