

# André dos Santos

POSTDOC RESEARCHER · INDUSTRIAL ENGINEER · PROFESSOR

☎ +1 (306) 570 - 1413 | ✉ [dossantos@ualberta.ca](mailto:dossantos@ualberta.ca) | 🏠 <https://andreeds.github.io/>

## Experience

### Computing Science Department - University of Alberta

*Edmonton, Canada*

#### POSTDOCTORAL FELLOW

Synthetic Data Generation  
AI Explainability

*Spring 2020 - Present*

### Computer Science Department - University of Regina

*Regina, Canada*

#### SESSIONAL LECTURER

CS340 Advanced Data Structures and Algorithm Design  
CS330 Introduction to Operating Systems  
CS115 Object-Oriented Design  
CS310 Discrete Computational Structures

*Summer 2020  
Winter 2020  
Winter 2020  
Fall 2019*

#### GUEST LECTURER

CS875 Database Systems  
CS838 Uncertain Reasoning in AI

*Fall 2018  
Spring 2017*

#### LAB INSTRUCTOR & MARKER

CS210 Data Structures and Abstractions  
CS215 Web and Database Programming  
CS110 Programming and Problem Solving

*2019  
2018  
2015 - 2019*

### Audio Visual Services - University of Regina

*Regina, Canada*

#### CLERICAL CLERK

*2015 - 2019*

#### DISTANT EDUCATION BROADCASTING OPERATOR

*Winter 2016*

#### CO-OP PLACEMENT

*Fall 2013*

### Guhring Brasil Ferramentas LTDA

*Joinville, Brazil*

#### LOGISTIC ANALYST

*2011 - 2012*

## Education

### University of Regina

*Regina, Canada*

#### PH.D. OF SCIENCE STUDENT IN COMPUTER SCIENCE

*2016 - 2020*

Study emphasis Deep Learning & Probabilistic Graphical Models

#### MASTER OF SCIENCE IN COMPUTER SCIENCE

*2015 - 2016*

Study emphasis Probabilistic Graphical Models

### University of Santa Catarina State

*Joinville, Brazil*

#### BACHELOR OF INDUSTRIAL SYSTEM ENGINEERING

*2009 - 2014*

### SENAI

*Joinville, Brazil*

#### INDUSTRIAL TRAINING COURSE - ELECTRICIAN

*2007*

## Skills

Artificial Intelligence XAI Deep Learning Engineering Bayesian Networks  
Join Tree Propagation RAPIDS Python TensorFlow C++ Spark MySQL

## Publications

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### Industry Track Presentations

1. J. Lamontagne, A. E. dos Santos, D. Barbosa, and P. Edwards. Synthetic data generation of financial transactions: A privacy-driven roadmap for unsupervised learning. *NVIDIA GTC*, 2021
2. A. E. dos Santos, J. Lamontagne, D. Barbosa, and P. Edwards. Synthetic data generation of financial transactions: A privacy-driven roadmap for unsupervised learning. In *Thirty-fourth Canadian Conference on Artificial Intelligence (AI)*, 2021

### Refereed Conference Papers

1. C. J. Butz, J. S. Oliveira, A. E. dos Santos, and A. L. Teixeira. Deep convolutional sum-product networks. In *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI)*, 2019
2. C. Butz, A. L. Teixeira, A. E. Dos Santos, and J. S. Oliveira. On the tree structure of deep convolutional sum-product networks. In *Thirty-Second International Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 500–503, 2019
3. C. J. Butz, A. E. dos Santos, J. S. Oliveira, and A. L. Madsen. Exploiting symmetry of independence in d-separation. In *Thirty-second Canadian Conference on Artificial Intelligence (AI)*, pages 42–54, 2019
4. A. L. Madsen, C. J. Butz, J. Oliveira, and A. E. dos Santos. Solving influence diagrams with simple propagation. In *Thirty-second Canadian Conference on Artificial Intelligence (AI)*, pages 68–79, 2019
5. C. J. Butz, J. S. Oliveira, A. E. dos Santos, and A. L. Madsen. An empirical study of Bayesian network inference with simple propagation. *International Journal of Approximate Reasoning (IJAR)*, 92:198–211, 2018
6. A. L. Madsen, C. J. Butz, J. S. Oliveira, and A. E. dos Santos. Simple propagation with arc-reversal in bayesian networks. In *Ninth International Conference on Probabilistic Graphical Models (PGM)*, 2018
7. C. J. Butz, A. E. dos Santos, J. S. Oliveira, and J. Stavrinides. Efficient examination of soil bacteria using probabilistic graphical models. In *Thirty-first International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems*, pages 315–326, 2018
8. C. J. Butz, J. S. Oliveira, and A. E. dos Santos. On learning the structure of sum-product networks. In *2017 IEEE Symposium on Computational Intelligence (SSCI)*, pages 1–8, 2017
9. A. E. dos Santos, C. J. Butz, and J. S. Oliveira. On converting sum-product networks into bayesian networks. In *Thirtieth Canadian Conference on Artificial Intelligence (AI)*, pages 329–334, 2017
10. J. S. Oliveira, C. J. Butz, and A. E. dos Santos. Resolving inconsistencies of scope interpretations in sum-product networks. In *Thirtieth Canadian Conference on Artificial Intelligence (AI)*, pages 305–315, 2017
11. C. J. Butz, A. E. Dos Santos, and J. S. Oliveira. On finding relevant variables in discrete bayesian network inference. In *Thirtieth International Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 730–735, 2017
12. C. J. Butz, A. E. dos Santos, and J. S. Oliveira. Relevant path separation: A faster method for testing independencies in bayesian networks. In *Eighth International Conference on Probabilistic Graphical Models (PGM)*, pages 74–85, 2016
13. C. J. Butz, J. S. Oliveira, A. E. dos Santos, and A. L. Madsen. Bayesian network inference with simple propagation. In *Twenty-ninth International Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 650–655, 2016
14. C. J. Butz, A. E. dos Santos, J. S. Oliveira, and C. Gonzales. On a simple method for testing independencies in bayesian networks. *Computational Intelligence (CI)*, 34(3):789–801, 2017
15. A. L. Madsen, C. J. Butz, J. S. Oliveira, and A. E. dos Santos. On tree structures used by simple propagation. In *Twenty-ninth Canadian Conference on Artificial Intelligence (AI)*, pages 207–212, 2016
16. C. J. Butz, J. S. Oliveira, A. E. dos Santos, and A. L. Madsen. Bayesian network inference with simple propagation. In *Twenty-ninth International Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 650–655, 2016
17. C. J. Butz, J. S. Oliveira, A. E. dos Santos, and A. L. Madsen. Testing independencies in bayesian networks with i-separation. In *Twenty-ninth International Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 644–649, 2016
18. C. Butz, J. Oliveira, and A. dos Santos. Darwinian networks. In *Twenty-eighth Canadian Conference on Artificial Intelligence (AI)*, pages 16–29, 2015
19. C. J. Butz, J. S. Oliveira, and A. E. dos Santos. Determining good elimination orderings with Darwinian networks. In *Twenty-eighth International Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 600–603, 2015

## Refereed Journal Papers

1. C. J. Butz, J. S. Oliveira, A. E. dos Santos, and A. L. Madsen. An empirical study of Bayesian network inference with simple propagation. *International Journal of Approximate Reasoning (IJAR)*, 92:198–211, 2018
2. C. J. Butz, A. E. dos Santos, J. S. Oliveira, and C. Gonzales. An empirical study of testing independencies in bayesian networks using rp-separation. *International Journal of Approximate Reasoning (IJAR)*, 92:270–278, 2018
3. C. J. Butz, A. E. dos Santos, J. S. Oliveira, and C. Gonzales. On a simple method for testing independencies in bayesian networks. *Computational Intelligence (CI)*, 34(3):789–801, 2017
4. C. J. Butz, J. S. Oliveira, and A. E. dos Santos. On Darwinian networks. *Computational Intelligence (CI)*, 33(4):629–655, 2017
5. A. E. dos Santos, A. T. Bringhenti, J. I. Zimmermann, G. O. Verran, R. K. Scalice, and D. Bond. Proposal and evaluation of a selection procedure for cast parts. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 39(8):3151–3163, 2017

## Service

2016 2020	<b>President   Treasurer   Secretary</b> , University of Regina Jiu Jitsu Club	<i>Regina, Canada</i>
2016 2020	<b>President   Treasurer   Secretary</b> , Brazilian Student Association (BRASA)	<i>Regina, Canada</i>
2018	<b>Logo &amp; Website creator</b> , University of Regina Jiu Jitsu Club	<i>Regina, Canada</i>
2016	<b>Logo creator</b> , RPIRG The Green Patch Garden	<i>Regina, Canada</i>
2010	<b>Introduction to Computers for the Elderly and Adults</b> , University of Santa Catarina State	<i>Joinville, Brazil</i>

## Awards

<b>University of Regina</b> GRADUATE STUDIES RESEARCH FELLOWSHIP (GRF) \$22,623.38	<i>Regina, Canada</i>  2016 - 2020
<b>SCHOLARLY AWARDS</b> \$5,600 \$6,000 \$3,500 \$65,023.41 BLR	 Winter 2016 Fall 2015 Summer/Spring 2015 2013
<b>University of Santa Catarina State</b> SCIENCE WITHOUT BORDERS SWG/CANADACBIE \$65,023.41 BRL	<i>Joinville, Brazil</i>  2013

## Languages

<b>English</b>	<i>Advanced Professional Proficiency</i>
<b>Portuguese</b>	<i>Functionally Native Proficiency</i>
<b>Spanish</b>	<i>Elementary Proficiency</i>
<b>French</b>	<i>Elementary Proficiency</i>

## About

Brazilian, 29 years old  
3<sup>rd</sup> kyu (light blue belt) in Shorinji Kan Jiu Jitsu  
Cartoon website <https://evahqs.tumblr.com/>  
Ukulele enthusiast