Ricardo Silva Carvalho

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Education

- Ph.D. Computer Science, **Simon Fraser University (SFU)**, Canada *Jan. 2019 – Present*
  Research focus on Deep Learning and Differential Privacy.
  Advisor: Ke Wang   GPA: 92%

- M.S. Computer Science, **University of Brasilia (UnB)**, Brazil *Aug. 2013 – Sep. 2015*
  Dissertation on Regularization Methods and PU Learning.
  Advisor: Rommel Novaes Carvalho   GPA: 93%

- Certificate in Data Science, **University of Washington (UW)**, USA *Mar. 2016 – Dec. 2016*
  Professional Education Program on Data Science.   GPA: 100%

- B.Eng. Computer Engineering, **Aeronautics Institute of Technology (ITA)**, Brazil
  Final essay on web development using JavaEE.   GPA: 81%   *Jan. 2007 – Dec. 2011*
  Advisor: Clovis Torres Fernandes

Work Experience

- **Senior Data Scientist** – Brazil's Office of the Comptroller General (CGU) *Nov. 2012 – Dec. 2018*
  During this time also occupied the position of **Data Science Manager** *Apr. 2017 – Feb. 2018*
  – Conducted exploratory analysis using R and Python on government data to help managers' decisions.
  – Built predictive models with machine learning to prioritize auditing, detect fraud and assess risk.
  – As Manager of the Observatory of Public Spending (ODP), led around 15 people – amongst data scientists, business intelligence analysts, developers and others – on projects related to Data Science and Research.

- **Software Engineer** – Brazilian Air Force (FAB) *May 2010 – Nov. 2012*
  – Designed Data Warehouses ETL (Extract-Transform-Load) processes for large military databases.

Recent Publications and Posters

- U. C. Cunha, **R. S. Carvalho**, A. Zaghetto. A Text Classification Model to Identify Performance Bonds Requirement in Public Bidding Notices. In Future of Information and Communication Conference (**FICC 2020**).

- L. Gondara, K. Wang, **R. S. Carvalho**. Winning Privately: The Differentially Private Lottery Ticket Mechanism. **POSTER**. In Workshop on Machine Learning with Guarantees, at the 33rd Conference on Neural Information Processing Systems (**NeurIPS 2019**).

- **R. S. Carvalho**, K. Wang. Privacy-Preserving Publication of Sensitive Data using Differentially Private GANs. **POSTER**. In British Columbia Artificial Intelligence Student Showcase (**BC AI Student Showcase 2019**).

- R. Hagstrom, **R. S. Carvalho**, R. Carvalho, H. Faria. Brazilian Republic Presidency Mobile Telephony Consumption Cost Reduction with Outliers Detection. In IEEE 3rd Inter. Conf. on Image, Vision and Computing (**ICIVC 2018**).

- T. Gomes, R. N. Carvalho, **R. S. Carvalho**. Identifying anomalies in parliamentary expenditures of Brazilian Chamber of Deputies with Deep Learning. In IEEE Intern. Conference on Machine Learning and Applications (**ICMLA 2017**).

- D. Reis, **R. S. Carvalho**, R. N. Carvalho. Two-phase Parallel Learning to Identify Similar Structures among Relational Databases. In IEEE International Conference on Machine Learning and Applications (**ICMLA 2017**).

- A. Maeda, **R. S. Carvalho**, R. N. Carvalho. Evaluating the use of Brazilian companies' financial footnotes texts for debt variation prediction. In IEEE International Conference on Machine Learning and Applications (**ICMLA 2017**).

- R. Mourão, G. Ramos, **R. S. Carvalho**, R. N. Carvalho. Predicting Waiting Time Overflow on Bank Teller Queues. In IEEE International Conference on Machine Learning and Applications (**ICMLA 2017**).

- L. Martins, M. Victorino, M. Holanda, R. N. Carvalho, **R. S. Carvalho**. Early prediction of college dropout using data mining. In IEEE International Conference on Machine Learning and Applications (**ICMLA 2017**).

- **R. S. Carvalho**, R. N. Carvalho. Bayesian Models to Assess Risk of Corruption of Federal Management Units. In Uncertainty in Artificial Intelligence (UAI) Bayesian Modeling Applications Workshop (**BMAW 2016**).

- S. L. Domingos, R. N. Carvalho, **R. S. Carvalho**, G. N. Ramos. Identifying IT Purchases Anomalies in the Brazilian Government Procurement System Using Deep Learning. In IEEE Inter. Conf. on ML and Applications (**ICMLA 2016**).

- R. G. Lopes, R. N. Carvalho, M. Ladeira, **R. S. Carvalho**. Predicting Recovery of Credit Operations on a Brazilian Bank. In IEEE International Conference on Machine Learning and Applications (**ICMLA 2016**).

- R. N. Carvalho, **R. S. Carvalho**, G. L. Mendes. Improving Social Accountability of Government Purchases Through Financial Statements Data Mining. Unleash Data: Accelerate Impact **KDD at Bloomberg, 2014**.

- **R. S. Carvalho**, R. N. Carvalho, M. Ladeira, F. M. Monteiro, G. L. O. Mendes. Using Political Party Affiliation Data to Measure Civil Servants' Risk of Corruption. In Brazilian Conference on Intelligent Systems (**BRACIS 2014**).

   Complete list of publications (Google Scholar Profile): http://bit.ly/publications-ricardo

Awards and Achievements

- Helmut & Hugo Eppich Family Grad School Award, Simon Fraser University, 2020.
- Graduate Fellowship, Simon Fraser University, 2019.
- Academic Honors, Brazilian Air Force (FAB), 2010.
- BBM Fellowship, Algorithms and Data Structures, BBM Investment Bank, 2010.
- Academic Honors, Brazilian Air Force (FAB), 2009.
- CNPq Scholarship for Scientific Project, Aeronautics and Space Institute (IAE), 2009.
- CNPq Scholarship for Scientific Project, Aeronautics Institute of Technology (ITA), 2008.

Teaching Experience

- **Teaching Assistant** – Simon Fraser University (SFU)   *Jan 2019 – Apr. 2019*
  - Only TA for "CMPT 459 - Special Topics: Data Mining" (professor Martin Ester) with more than 80 students enrolled. Main duties were to: mark the assignments and the exams; assist the professor in preparing the solutions for the assignments, hold weekly office hours and answers student emails.

- **Professor** – University of Brasília (UnB)   *May 2017 – Nov. 2018*
  – Volunteer professor on the Applied Computer Science Master's program at the Computer Science Department. Teaching course "Massive Data Mining", using R, Python, H2O.ai and Apache Spark.

- **Professor** – Federal University of Goiás (UFG)   *Nov. 2017 – Mar. 2018*
  – Invited professor on the Specialization in Business Intelligence Solutions at the IT Department. Teaching course "Big Data Architecture and Big Analytics", with topics on HDFS, Hive, Apache Spark and MongoDB.

- **Teaching Assistant** – Aeronautics Institute of Technology (ITA)   *Mar. 2010 – Jul. 2010*
  - Only TA for second-year engineer course "Algorithms and Data Structures" (professor Armando Nogueira).

Languages

- English: Full Professional Proficiency – IELTS (both GT and AC): Overall 8 out of 9
- Portuguese: Native.

Skills

- R, Python, TensorFlow, Spark, Java.