

Diego Da Silva, PhD

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Education

PhD Computer Science

Federal University of ABC (UFABC)

Santo Andre, SP, Brazil

2016 - 2021

- Dissertation: *A Method for Finding Factors Affecting the Service Reliability on Fixed Bus Routes* (Supervisor: Dr. Raphael Yokoingawa de Camargo).

International Visiting Graduate Student

University of Toronto

Toronto, ON, Canada

2019 - 2021

Diploma in Industrial Management

Polytechnic School of the University of Sao Paulo (USP)

Sao Paulo, SP, Brazil

2007 - 2009

BSc Science & Technology

Federal University of ABC (UFABC)

Santo Andre, SP, Brazil

2007 - 2012

BSc Civil Construction

Sao Paulo State Technological College (FATEC-SP)

Sao Paulo, SP, Brazil

2002 - 2006

Academic Employment

Postdoctoral Fellow

University of Toronto Transit Analytics Lab (Dr. Amer Shalaby)

Toronto, ON, Canada

April 2021 - Present

- Working to benchmark, simulate and analyze urban transit and rail systems, including reliability and decision-making processes.

Research Contracts

Getulio Vargas Foundation (FGV)

Automated Fare Collection and ABT System Design

Toronto, ON, Canada

May 2023 - Present

- Technology consultancy to support the Automated Fare Collection (AFC) and Account-Based Ticketing system design for EPTC, Porto Alegre/RS - Brazil.

Getulio Vargas Foundation (FGV)

Big Data for Sustainable Urban Development

Toronto, ON, Canada

March 2021 - August 2021

- The Getulio Vargas Foundation (FGV-Brazil), with funding from the Inter-American Development Bank (IDB) and support from Waze, undertook a project called "Big Data for Sustainable Urban Development." The project was implemented in four cities and a district in Latin America: São Paulo (Brazil), Montevideo (Uruguay), Quito (Ecuador), Xalapa (Mexico), and Miraflores (Peru). Developed the congestion indicator and implemented a dashboard to monitor city traffic.

TransitCenter

TransitCenter Equity Dashboard

Toronto, ON, Canada

March 2020 - February 2021

- 100,000 USD project to develop comprehensive transit access and equity analysis across seven urban areas in the United States (PI: Prof. Alex Karner). Led the technical development and built a Fare Calculator system in Python as part of the transit access score calculation.

Academic Contributions

Peer-Reviewed Journal Publications

- A1 **Da Silva, D.**, Klumpenhouwer, W., Karner, A., Robinson, M., Liu, R., and Shalaby, A. (2022). Living on a Fare: Modeling and Quantifying the Effects of Fare Budgets on Accessibility and Equity. *Journal of Transport Geography* 101, p. 103348.
- A2 Klumpenhouwer, W., Allen, J., Li, L., Liu, R., Robinson, M., **Da Silva, D.**, Farber, S., Karner, A., Rowangould, D., Shalaby, A., Buchanan, M., and Higashide, S. (2021). A Comprehensive Transit Accessibility and Equity Dashboard. *Findings* (July).

Peer-Reviewed Journal Publications Under Review

- AR1 **Da Silva, D.**, Elsaid, F., Shalaby, A. Constructing Origin-Destination Matrix using Wi-Fi and AFC Data. *Transportation (Under Review)*.
- AR2 **Da Silva, D.**, Shalaby, A. Forecasting Short-Term Subway Passenger Flow Using Wi-Fi Data Comparative Analysis of Advanced Time-Series Methods. *Journal of Intelligent Transportation Systems (Under Review)*.

Peer-Reviewed Conference Publications

- B1 Chen, R., Shalaby, A., **Da Silva, D.** (2024). Trends in Toronto's Subway Ridership Recovery: An Exploratory Analysis of Wi-Fi Records. In *Proceedings of the 103rd Transportation Research Board*. Washington, DC. 32 pages.

Peer-Reviewed Conference Presentations

- C1 **Da Silva, D.**, Shalaby, A. (2024). Forecasting Short-Term Subway Passenger Flow Using Wi-Fi Data Comparative Analysis of Advanced Time-Series Methods. *103rd Annual Meeting of the Transportation Research Board*. Washington, DC.
- C2 Othman, K., **Da Silva, D.**, Shalaby, A., Abdulhai, B. (2024). Data-Driven Prediction of e-Bus Battery Consumption Rates Using Machine Learning Techniques in the Canadian Environment. *103rd Annual Meeting of the Transportation Research Board*. Washington, DC.
- C3 R Chen, A Shalaby, **Da Silva, D.** (2024). Trends in Toronto's Subway Ridership Recovery: An Exploratory Analysis of Wi-Fi Records. *103rd Annual Meeting of the Transportation Research Board*. Washington, DC.
- C4 **Da Silva, D.**, Elsaid, F., Shalaby, A. (2023). Constructing Origin-Destination Demand Matrix Using Wi-Fi and Automated Fare Collection Gate Count Data: A Case Study of Toronto's Subway Network. *102nd Annual Meeting of the Transportation Research Board*. Washington, DC.
- C5 **Da Silva, D.**, Robinson, M. Liu, R., Klumpenhouwer, W., Shalaby, A., and Karner, A. (2022). A Flexible Itinerary-Based Fare Calculator with Detailed Transfer Modeling. *101st Annual Meeting of the Transportation Research Board*. Washington, DC.

Conference Abstracts

- D1 Klumpenhouwer, W., Allen, J., Li, L., Liu, R., Robinson, M., **Da Silva, D.**, Farber, S., Karner, A., Rowangould, D., Shalaby, A., Buchanan, M., and Higashide, S. (2021). Dashboarding Transit Accessibility *Canadian Urban Transit Association 2021 Virtual Conference*. Toronto, Canada.

Relevant Professional Experience

Manager, Advanced Analytics and Digital Transformation

Deloitte Touche Tohmatsu

Sao Paulo, SP, Brazil

August 2019 - September 2021

- Planned and controlled the implementation of information systems.
- Developed and implemented policies and procedures for data processing and systems development and operations.
- Met with clients to discuss system requirements, specifications, costs, and timelines.
- Assembled and managed teams of information systems personnel to design, develop, implement, operate, and administer software, networks, and information systems.
- Controlled the budget and expenditures of projects.
- Recruited and supervised analysts, engineers, programmers, technicians, and other personnel and oversaw their professional development and training.
- Managed technology projects in various industries, including Banking, Payments, Communications, Insurance, Logistics, and Software Development.

Senior Consultant, Advanced Analytics and Digital Transformation

Deloitte Touche Tohmatsu

Sao Paulo, SP, Brazil

April 2017 - August 2019

- Confered with clients to identify and document requirements.
- Conducted business and technical studies.
- Designed, developed, integrated, tested, and implemented information systems business solutions.
- Provided advice on information systems strategy, policy, management, security, design, and service delivery.
- Confered with clients to identify and document requirements and assess physical and technical security risks to data, software, and hardware.
- Developed and implemented policies and procedures throughout the software development life cycle to maximize the efficiency, effectiveness and overall quality of software products and information systems.
- Conducted independent third-party reviews to assess quality assurance practices, software products and information systems.
- Trained more than 100 technology consultants in the Agile methodology.

Senior Analyst, IT PMO

Nextel Communications

Sao Paulo, SP, Brazil

September 2012 - December 2015

- Led and controlled 3G and 4G network deployment.
- Coordinated the User Acceptance Testing (UAT), contingency and business continuity plan.

Product Analyst, Digital Channels

Itau-Unibanco Bank

Sao Paulo, SP, Brazil

November 2010 - September 2012

- Conducted a variety of data-driven projects on customer usage and behaviour on digital channels, such as ATM, internet banking, and mobile banking. (approx. 16 million customers).
- Tracked critical banking products performance metrics.
- Led Business Intelligence and Data Analytics projects using SAS, SQL, R, and MicroStrategy.

Student Research Mentorship

- Rohan Wongkee. Testing machine learning methods on Wi-Fi data to predict service disruptions at the Toronto Transit Commission (TTC). University of Toronto. NSERC Undergraduate Student Research Award. Summer 2023.

Professional Development and Certifications

Public Transit Planning & ITS, Public Transit Modelling

University of Toronto

Toronto, ON, Canada

August 15 - 17, 2023

- Attended and completed two courses over three days on public transit planning, modelling, and the application of information technology systems in transit.
- Learned from world-renowned transit researchers Drs Nigel Wilson, Eric Miller, Amer Shalaby, and Brendon Hemily.

Conferences, Events and Programs

The Fields Institute for Research in Mathematical Sciences

Toronto, ON, Canada

- Deep Learning for Natural Scientists (York University) - Fall 2023.
- Conference on Optimization - November 25 - 27, 2019.
- Conference on Data Science and Optimization - November 18 - 20, 2019.
- Conference on Data Science - November 12 - 15, 2019.
- Winter School on Computational Data Science and Optimization - November 4 - 8, 2019.
- Quantum Futures Hackathon - October 18 - 20, 2019.
- Bootcamp on Machine Learning for Finance - September 26 - 27, 2019.

Professional Certification - Scrum Master I

Scrum.org

Sao Paulo, SP, Brazil

June 4, 2018

- Scrum Master Certification for Agile Project Management.

MOOCs

edX

- Urban Transit for Livable Cities - University of Pennsylvania - Issued August 4, 2023.
- Leveraging Urban Mobility Disruptions to Create Better Cities - MITx - Issued August 4, 2023.
- Big Data and Social Physics - MITx - Issued May 23rd, 2014.

Coursera

- Supervised Machine Learning: Regression and Classification - Stanford University - Issued August 19, 2022.
- Exploratory Data Analysis - Johns Hopkins University - Issued August 5, 2014.
- Getting and Cleaning Data - Johns Hopkins University - Issued June 17, 2014.
- R Programming - Johns Hopkins University - Issued May 8, 2014.

Volunteer and Extracurricular Activities

Climate Resilient Communities (CRC.green)

Volunteer Software Engineer

Toronto, ON, Canada

Spring 2023 - Present

- Lead the development of a user-friendly open-data platform to support low-income communities in Toronto to tackle climate change.
- Volunteer instructor for training community leaders in Data Analytics and Civic Innovation.

University of Toronto Grappling Club

Instructor

Toronto, ON, Canada

Fall 2019 - Summer 2023

- Volunteered as a Brazilian Jiu Jitsu Instructor at the Hart House/UofT.

Nextel Institute Tutoring Program

Tutor

Sao Paulo, SP, Brazil

Spring 2014

- Volunteered as a tutor in vocational training for high school students who were in situations of social vulnerability.