

# RAFAEL LINO DOS SANTOS

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## Research Summary

PhD Candidate at University of Campinas (Unicamp) enrolled in the Post-Graduate Program in Civil Engineering - Transportation System major. Master's Degree also at University of Campinas. Moreover, he is member of the Live Electric Mobility Laboratory for Public Transportation Project (Living Lab) at Unicamp, with research area related to the use of GIS tools for optimizing routes in urban public transport, through passenger demand estimation techniques. Specialist in Teaching in Professional and Technological Education at Federal Institute of Education, Science and Technology of South Minas Gerais (IFSULDEMINAS) - Post-graduation program. Bachelor's degree in Engineering of Surveying and Cartography and graduated as a Surveying Technician at Federal Institute of Education, Science and Technology of South Minas Gerais (IFSULDEMINAS). Complementary education (provided by the Brazilian Government program called Science without Borders) at Niagara College Canada in the Geographic Information Systems - Geospatial Management program

## Education

- **Post-graduation program in Civil Engineering - Transportation System - Doctorate Degree**  
Faculty of Civil Engineering, Architecture and Urban Planning / University of Campinas (Unicamp), Brazil. (Currently enrolled).
- **Post-graduation program in Civil Engineering - Transportation System – Master's Degree**  
Faculty of Civil Engineering, Architecture and Urban Planning / University of Campinas (Unicamp), Brazil. (2019-2020).
- **Post-graduation program Teaching in Professional and Technological Education**  
IFSULDEMINAS – Inconfidentes Campus, Brazil. (2020-2020).
- **Bachelor's degree in Engineering of Surveying and Cartography.**  
IFSULDEMINAS - Inconfidentes Campus, Brazil. (2011 - 2017).
- **Geographic Information Systems - Geospatial Management.**  
Niagara College Canada (2014-2015, Incomplete)
- **English as a Second Language.**  
Niagara College Canada  
English Program for the development of English Language skills, both for academic preparation and for professional career.
- **Surveying Technician**  
IFSULDEMINAS – Inconfidentes Campus, Brazil. (2008 - 2010).

## Work Experience

- **Unicamp – University of Campinas.** Campinas, São Paulo - Brazil. (February 2019 - Current)  
Researcher – Experience with solving vehicle routing problem on a Geographic Information System (GIS) platform - *ArcGIS for Desktop*. Experience with data analysis, modeling and management data.
- **English teacher at Center for Cooperation and Human Development (CCHD)** - Vietnamese non-government organization, online teaching (August 2020 - Current).
- **TechGEO Engenharia.** Bueno Brandão, Minas Gerais - Brazil. (February 2016 - March 2018)  
Experience in projects of regularization of rural properties, including georeferencing, rectification, dismemberment, remembrance, rural environmental registry (CAR), leasing and monitoring of works, and general surveying services, as well as elaboration of topographic plants.

- **English teacher at Wizard English Language Center** - Bueno Brandão, Minas Gerais Brazil. (February 2017 - June 2017).  
Instructor of English Language from basic to advanced levels.
- **English teacher at YES English Language Center** - Bueno Brandão, Minas Gerais Brazil. (November 2015 - December 2016).  
Instructor of English Language from basic to advanced levels.
- **GIS Analyst at DIG - Drainage Investment Group.** Niagara Falls, Ontario - Canada (June 2015 - September 2015).  
Experience in creating maps and graphic creation in support of reporting; creation, maintenance and analysis of both spatial and non-spatial data on different platforms, including ESRI ArcGIS (Experience with ModelBuilder, data analyses and creation of maps), MS Access and Microsoft Office; Familiarity with SQL and Python.
- **Surveying Technician at the City Hall of São Carlos (Internship).** São Carlos, São Paulo- Brasil. (January 2010).  
Experience in performing topographic surveys, as well as the elaboration of topographic maps.
- **Surveying Technician at the City Hall of Bueno Brandão (Internship).** Bueno Brandão, Minas Gerais - Brazil (July 2009).  
Experience in performing topographic surveys, as well as the elaboration of topographic maps.

## **Skills**

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Land surveying using appropriate methods and equipment as well as using satellite positioning system (GNSS).

Identify surfaces and reference systems, map projections, and coordinate systems.

Prepare maps from georeferenced data.

Specific software for acquisition, processing and analysis of georeferenced data.

Cartography and Graphic Design.

Advanced knowledge on ArcGIS

Beginner to Intermediate knowledge on Python

Spatial Data and Algorithms understanding.

## **Scientific Research**

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### • **Articles in Refereed Journals**

**SANTOS, R. L.; OLIVEIRA, H. C.; ALMEIDA, M. C.; VIEIRA, D. F.; LACUSTA JUNIOR, E. P.; JI, T. A** Low-Cost Bidirectional People Counter Device for Assisting Social Distancing Monitoring for COVID-19. **Journal Of Control Automation and Electrical Systems**, v. 1, p. 1-13, 2022. DOI: <https://doi.org/10.1007/s40313-022-00916-z>.

**Article** - OLIVEIRA, H. C.; ALMEIDA; SANTOS, **SANTOS, R. L**; BARBOSA, L. A.; COSTA, D. C.; BARBOSA, R. A.; SOUSA, R. P. Otimização de Rotas de Ônibus baseada em Demanda obtida por Dados de

Posicionamento GNSS. Brazilian Cartography Journal (RBC). v. 72, p. 326-344, 2020. DOI: <https://doi.org/10.14393/rbcv72n2-51511>.

- **Chapters in Books**

MARIOTTO, F. T.; OLIVEIRA, H. C.; ALMEIDA, M. C.; **SANTOS, R. L.** Campus Sustentável: Um modelo de inovação em gestão energética para a América Latina e o Caribe. 1. ed. SYNERGIA, 2021. 373p.

- **Selected Publications – Bulletins**

**SANTOS, R. L.**; OLIVEIRA, H. C. Desenvolvimento e Validação de um Dispositivo Automático de Baixo Custo para Georreferenciamento do Volume de Passageiros em Transporte Público, 2020.

- **Dissertation - Master's Degree**

**SANTOS, R. L.** Route Optimization for public transportation using multitemporal data from a low-cost system. University of Campinas, 2021, 126p.

- **Final Project - Bachelor's Degree**

**SANTOS, R. L.** Defining routes for mail delivery service vehicles in the municipality of Inconfidentes / MG. IFSULDEMINAS - Campus Inconfidentes, 2017.

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### **Languages**

**Portuguese:** Native or bilingual proficiency.

**English:** Full professional proficiency.

**Spanish:** Elementary proficiency.