

## Contact

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(LinkedIn)  
d-camargo.github.io/ (Personal)

## Top Skills

Budgeting  
Construction Engineering  
Construction

## Languages

Espanhol (Limited Working)  
Português (Native or Bilingual)  
Inglês (Professional Working)

## Certifications

Versionamento de Código com Git e GitHub  
Excel: Como Criar um Dashboard Básico  
Gestão de Projetos Educacionais

# Diego Camargo

Transportation Engineering Specialist | Data Analysis for  
Transportation with Python & QGIS  
Belo Horizonte, Minas Gerais, Brazil

## Summary

With a career dedicated to the intersection of Transportation Engineering and Data Science, my professional work combines teaching at CEFET-MG, research, and the development of technological solutions for the sector.

### KEY EXPERTISE:

1. Geospatial and operational data analysis using the Python and SQL programming languages in software like QGIS.
2. Development of custom tools, such as the "Desire Lines" QGIS plugin, to facilitate the visualization of origin-destination data.
3. Creation of educational content and extension projects, like the "Mobiliza CEFET-MG" YouTube channel, to train future professionals in the field.
4. Experience in urban public transportation consulting, focusing on operational analysis and developing tools for data management.

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## Experience

Centro Federal de Educação Tecnológica de Minas Gerais

Professor EBTT

July 2018 - Present (7 years 9 months)

Belo Horizonte, Minas Gerais

- Professor in the Transportation Engineering program and Technical courses in Traffic and Highways - DET (Nova Suíça Campus - Belo Horizonte).  
Taught courses: Geoprocessing; Geoprocessing Laboratory; Road Projects Laboratory; Introduction to Traffic Engineering; Fundamentals of Traffic Engineering; Geospatial Data Analysis using SQL and Python programming languages.
- Professor in the Civil Engineering program - DECMA (Curvelo Campus - from July 2018 to October 2019). Taught courses: Elements of Transportation Planning; Highways I; Highways II; Railways; and Special Topics in Transportation.

- Using software such as QGIS, Aimsun, and spreadsheets to supplement educational materials, thereby fostering the enhancement of students' skills and competencies.
- Research project involving the development of a QGIS Plugin using GTFS data (city of Belo Horizonte) and bus stop demand data. Project in progress using the Python programming language for QGIS (PyQGIS).
- Extension project called Mobiliza CEFET-MG (<https://www.youtube.com/@MobilizaCEFETMG>) aimed at providing tutorial videos for technicians and students of transportation engineering.
- Designed and developed the Desire Lines plugin for QGIS, a tool aimed at representing origin-destination (OD) data as desire lines. This visualization highlights movement patterns, showing the preferred or actual paths between origins and destinations on a map. Official repository at GitHub ([https://github.com/d-camargo/desire\\_lines](https://github.com/d-camargo/desire_lines))

## Universidade Federal de Goiás

Professor assistente

February 2017 - July 2018 (1 year 6 months)

Catalão e Região, Brasil

- I taught the following courses in the civil engineering program: Transportation Planning; Pavement Design; Traffic Engineering; Highway Design 1; Highway Design 2; Technical Drawing 1.
- Assistance to students and course coordination, presenting suggestions and clarifying doubts about the offered disciplines.
- Guidance for course completion papers and research projects.

## Kroton Educational SA

Autor

August 2017 - December 2017 (5 months)

- Production of educational materials for the Ports and Navigable Waterways course (6 handouts, respective classroom materials, and study guides)

## Self Employed

Civil Engineer

March 2015 - February 2017 (2 years)

Bofete, São Paulo, Brazil

- Developed technical documentation for the approval and regularization of new residential projects and ongoing construction works, ensuring compliance with local and state regulations.

- Prepared technical deliverables for administrative rectification of urban and rural land areas, as well as processes for land unification and subdivision in accordance with land registry and zoning requirements.
- Managed project workflows and client relationships, overseeing timelines, deliverables, and communication to ensure project goals were met efficiently and effectively.
- Conducted topographic surveys using GNSS RTK, GNSS post-processing, and Total Station, ensuring high-precision data collection for land measurement, project planning, and regularization.

### IPK Projetos LTDA

#### Transportation Engineer

February 2015 - January 2016 (1 year)

Piracicaba e Região, Brasil

- Company providing consulting services in Urban Public Transportation, mainly focusing on operational analysis (verification of service frequency, demand, supply, and operational costs).
- Main activities: registration of operational information in proprietary software, data organization and processing. Participation in projects for restructuring urban public transportation systems, analyzing passenger demand data, and developing service offering proposals.
- Development of tools for demand and operation data management (using MySQL and Visual Basic for Applications), enabling the generation of managerial information/reports for decision-making.

### Prefeitura Municipal de Bofete

#### Civil Engineer

January 2013 - March 2013 (3 months)

Bofete, São Paulo

Monitoring and management of projects contracted by the municipality.  
Review of ongoing projects.  
Participation in the development of budgets for bidding notices.

### Karunya University

#### Intern

July 2011 - December 2011 (6 months)

Developed a academic project about Hybrid Process – electrocoagulation and natural coagulants applied to wastewater containing dyes from textile industries.

### Departamento de Águas e Energia Elétrica

Intern

April 2009 - April 2011 (2 years 1 month)

Pre-analysis of process of grant-in-aid to municipality of PCJ watershed;  
Analysis documentation relative to charging PCJ;  
Pre-analysis process for granting of interference and/or right of use for water resources.

### BEMA Empreendimentos e Construções LTDA.

Intern

February 2010 - July 2010 (6 months)

Piracicaba e redondezas, Brasil

Support and development at the budgets;  
Possible visits to the work Mirante bridge, cable-stayed bridge in Piracicaba;  
Elaboration and editing drawings with the software AutoCAD

### IPK Projetos LTDA

Intern

February 2007 - March 2009 (2 years 2 months)

Advising on operational planning transport;  
Formulation of spread sheets;  
Analysis of operating cost;  
Participation in the implementation of school transportation in Paulínia city.

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## Education

Universidade de São Paulo

Master's degree, Transportation/Mobility Management · (2013 - 2015)

Escola de Engenharia de Piracicaba - EEP

Graduação, Engenharia Civil · (2007 - 2012)