

# JOÃO PEDRO BAZZO VIEIRA

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C.V. last updated in March 2023

## EDUCATION

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M.Sc. in Environmental Engineering 📅 2020  
**Federal University of Parana**

Title: "Spatiotemporal vehicle emissions inventory model: A case study in Curitiba-PR" [[Link](#)][*In portuguese*]  
Advisor: Prof. Marcelo Risso Errera Co-Advisor: Luiz Carlos Daemme

B.Sc. in Environmental Engineering 📅 2016  
**Federal University of Parana**

Title: "Flow rates regionalization using RBF Neural Artificial Networks" [[Link](#)][*In portuguese*]  
Advisor: Prof. Ricardo Carvalho de Almeida

Exchange Program in Environmental Engineering 📅 2014  
**University of Waterloo**

Fellowship Science Without Borders Grant

## EXPERIENCE

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Research Assistant

**Institute for Applied Economic Research (IPEA)**

📅 Sept 2019 – Current (3 yrs 3 mos)

📍 Brasília, Brazil

- Development of R packages to process GTFS in a high spatiotemporal resolution (`gtfs2gps` package) and to estimates tailpipe emissions from public transportation (`gtfs2emis` package);
- Research on multiple topics of urban mobility in Brazil (e.g. trends and inequalities of urban mobility in Brazil; the impact of COVID-19 in the air travel demand and emissions; racial and income inequalities in access to health; urban form and sustainable mobility; time geography in the context of public transport networks)
- Member of **Access to Opportunity** project, which aims to calculate people's access to jobs, health, and education services by different transport modes for Brazil's largest cities;
- International comparison of urban buses emissions based on GTFS data [*In progress*].

Research Coordinator

**Cicloiguacu Cyclist Association**

📅 Jun 2016 – Jun 2019 (3 yrs 1 mo)

📍 Curitiba, Brazil

- NGO aims to increase and improve bicycle use as a mode of transportation in Curitiba
- Coordination of Curitiba's cyclist profile 2017, an initiative of Metropolitan Observatory UFRJ; Transporte Ativo and LABMOB
- Participation in vehicle counts projects, seminars about bicycles in the urban environment, spatial data analysis on cyclist injuries and deaths, with partnership with local universities

Intern

**Envex Consulting**

📅 Feb 2015 – Mai 2016 (1 yrs 4 mo)

📍 Curitiba, Brazil

- Air quality, noise pollution, hydrology, and environmental impact assessment projects
- Development of R scripts to process and visualize data on air quality and noise monitoring projects

## Research intern

### **University of Waterloo | Climatology Lab**

📅 Set - Dec 2014 (4 mos)

📍 Waterloo, Canada

- Research in a project entitled "The study of the relationship between ocean temperature and jet streams displacement in scenarios of climate change", with the supervision of Prof. Christopher Fletcher;
- Programming using R and Linux (Bash Shell), as part of the Science Without Borders project grant.

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## Intern

### **Public Prosecutors Office**

📅 Nov 2011 – Ago 2013 (1 yrs 10 mo)

📍 Curitiba, Brazil

- Assistance on processes related to municipal solid waste management, atmospheric emissions, environment licensing, and water resources;
- Development of report on composting and municipal solid waste management
- Technical analysis on Environment Impact Studies, Solid waste management plans, and other projects related to environmental management of cities and industries
- Inspection of industrial and environmental damaged areas; Studies involving environmental law.

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## Junior Enterprise

### **Ciclus Consulting – Federal University of Parana**

📅 Mar 2010 - Mar 2013 (2 yrs 11 mo)

📍 Curitiba, Brazil

- Greenhouse gas inventory project; Entrepreneurship and project management training;
- Supervision of project consultants responsible for: i) Meet the project deadline and budget; ii) Follow methodology for project management.

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## PUBLICATIONS

### Work in progress

- An international bottom-up inventory of public transport emissions
- A methodology for spatiotemporal vehicular emissions inventories using Origin-Destination data
- The profile of active mobility in Brazil

### Articles

- Vieira, J. P., Vieira Braga, C. K., Pereira, R. H. M. (2022). The impact of COVID-19 on air passenger demand and CO2 emissions in Brazil. *Journal of Energy Policy*, 164, 112906. [\[Link\]](#)
- Pereira, R. H. M., Andrade, P. R., Vieira, J. P. B. (2022). Exploring the time geography of public transport networks with the gtfs2gps package. *Journal of Geographical Systems*. [\[Link\]](#)

### Pre-print

- Vieira, J. P., Pereira, R. H. M., Andrade, P. R. (2023, March 08). Estimating public transport emissions from GTFS data with gtfs2emis. (Under review in *Journal of Transportation Research Part D*) [\[Link\]](#)
- Tomasiello, D. B., Pereira, R. H. M., Vieira, J. P., Parga, J. P. F. A., Servo, L. M. S. (2022, November 10). Racial and income inequalities in access to health in Brazilian cities. [\[Link\]](#)

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### Working papers and reports

- Tomasiello, D.B., Vieira, J.P., Parga, J.P., Servo, L.M, Pereira, R. H. M. (2023). Racial and income inequalities in access to health in Brazilian cities. Working Paper 2832. Ipea - Institute for Applied Economic Research. [\[Link\]](#) [[In portuguese](#)]
- Pereira, R. H. M., Herszenhut, D., Braga, C. K. V., Vieira, J.P., Oliveira, J. L. A. O., Parga, J.P., Saraiva, M., Silva, L.P., Tomasiello, D.B., Warwar, L. (2022) Spatial distribution of sociodemographic characteristics and public services in the 20th major cities of Brazil. Working Paper 2772. Ipea - Institute for Applied Economic Research. [\[Link\]](#) [[In portuguese](#)]
- Pereira, R. H. M., Parga, J. P., Saraiva, M., Vieira, J. P., Tomasiello, D., Silva, L. P., Nadalin, V. G., Barbosa, R. J. (2022). TD 2802: Urban form and sustainable mobility: evidences from Brazilian cities. [\[Link\]](#) [[In portuguese](#)]

- Pereira H.M.R., Warwar L., Parga J., Vieira J.P.B., Braga C.K., Herszenhut D. and Saraiva M. (2021). TD 2673: Trends and inequalities of urban mobility in Brazil I: the use of public and individual transport. [[Link](#)][In portuguese]
- Miranda, A.C. and Vieira J.P.B. (2020).The use of bicycles in the context of urban mobility. p.335 In: Urban mobility: a multidisciplinary approach. Ed. by Cristina Araújo Lima. Curitiba: UFPR. ISBN: 978-65-86233-02-5 [[In portuguese](#)]
- Belloto, J.C. A., Nakamori, S. and Vieira, J.P.B.(2020). Public institutions and traffic sources: practices to encourage sustainable mobility at UFPR and CELEPAR. In: Brazilian public management: innovation and network sustainability. Ed. by Villac, T. v. 1, p. 203-221 [[In portuguese](#)]
- Moreira, H.J.; Vieira, J.P.B.; Dittert, L.F.; Miranda, A.C.M.; Reck,Y.B. (2020). Temporary infrastructure for active mobility: Cycle mobility solutions to adapt the streets in the fight against the pandemic. UCB & Cicloiguaçu. Curitiba. [[Link](#)][[In portuguese](#)]

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## Congress Articles

- Vieira, J. P. B., Errera, M. R., Daemme, L. C. (2019, October 1). Air Pollutants Modeling using Bottom-up Vehicular Emissions Inventory. Zenodo. <https://doi.org/10.5281/zenodo.7314409> [[Link](#)]
- Vieira, J. P. B., Almeida, R. (2016, October 22). Flow regionalization using Neural Artificial Networks RBF. Zenodo. <https://doi.org/10.5281/zenodo.7314385> [[Link](#)] [[In portuguese](#)]
- Gasparovic, C. L. M.; Ostroski, A.; Vieira, J. P. B.; Errera, M. R. . Elementary Constructual Design of a carbon capture systems based on carbonation over fly ashes.. In: Constructual Law Second Law Conference 2019 CLC 2019, 2019, Porto Alegre. Proceedings of Constructual Law Second Law Conference - CLC - 2019. Porto Alegre: Unisinos Porto (Brazil), 2019. v. 1. p. 184-187

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## R packages

- Vieira, J.P.B.; Pereira, R.H.M.;Andrade, P.R.(2022) gtfs2emis: Generating estimates of public transport emissions from GTFS data. GitHub [[Link](#)]. [Autor, Mantainer]
- Espinosa, S.I.; Vieira, J.P.B. (2021). vein: Vehicular Emissions Inventories. Version 0.9.4. [[Link](#)]. [Contributor]
- Pereira, R.H.M.; Andrade, P.R.; Vieira, J.P.B. (2019) gtfs2gps: Converting GTFS data to GPS format. Zenodo [[Link](#)].[Autor]
- Herszenhut, D.; Pereira, R. H. M., Andrade, P. R., Vieira, J.P.B. (2022, May). gtfstools: General Transit Feed Specification (GTFS) Editing and Analysing Tools (Version v1.1.0). Zenodo. [[Link](#)].[Autor]

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## Final Project Undergraduate referee (selected)

- Student Isadora Bergami. "Prediction of Particulate Matter in urban environment using random forest" (2021). Undergraduate program of Environmental Engineering UFPR [[In portuguese](#)]

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## AWARDS & GRANTS

- 2022 International Transport Forum (ITF) Decarbonising Transport Award finalist [[Link](#)]
- 2021 "Enjoy Science UFPR" Award due to master thesis excellence
- 2017-2019 CAPES Studentship for Master Degree at Federal University of Parana (UFPR)
- 2013-2014 Exchange program at University of Waterloo (Canada), Science Without Border program

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## REFERENCES

1. **Rafael H.M. Pereira**
  - *Institution:* Institute for Applied Economic Research
  - *Position:* Head of Data Science at the Department of Regional,
  - *Relationship:* Supervisor
  - *E-mail:* rafael.pereira@ipea.gov.br
  - *Phone:* +556199070512
2. **Marcelo Risso Errera**
  - *Institution:* Federal University of Parana
  - *Position:* Professor
  - *Relationship:* Master thesis advisor
  - *E-mail:* errera@ufpr.br
  - *Phone:* +554133613012