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Professional Summary

I am an epidemiologist, data scientist, and public health nutritionist working with epidemiology, maternal & neonatal health, and machine learning on large health datasets. I am currently working as a Researcher in Health Data Science at the London School of Hygiene & Tropical Medicine (LSHTM) – University of London, where I contribute to a Wellcome Trust-funded project on predictive modelling for stillbirths and neonatal deaths across Sub-Saharan Africa. I am also involved in teaching the postgraduate course Statistical Methods in Epidemiology and in supervising MSc dissertations, supporting students in applying advanced quantitative approaches to public health research.

I hold a Ph.D. in Public Health -Epidemiology at the University of São Paulo (USP), Master's degree in Epidemiology from the Federal University of Bahia (UFBA), a Bachelor's degree in Nutrition from Lúrio University, and a Postgraduate Diploma in Public Health with a focus on Monitoring, Evaluation, and Strategic Information (UFBA). I have completed MBAs in Data Science and Analytics (USP-Esalq), Artificial Intelligence and Big Data (ICMC-USP), and Project Management (USP-Esalq).

Professionally, I worked as a Technical Consultant in Health (Epidemiologist and Data Scientist) at the World Health Organization (PAHO/WHO), supporting Brazil's Ministry of Health with COVID-19 data analysis and policy guidance. At the São Paulo State Health Department, I conducted spatial analyses, disease forecasting (meningitis, influenza, COVID-19), and developed predictive models to guide strategic health decisions. I also served as a Scientific Curator and Data Analyst at Pacto Contra a Fome in Brazil, translating complex scientific evidence into actionable insights to inform national food security policies. Earlier in my career, I worked as a Nutritionist for the Ministry of Health in Mozambique, leading district-level nutrition programs in Maganja da Costa and participating in national malnutrition studies in partnership with UNICEF and the World Food Programme (WFP).

I am an active member of research groups including the Big Data and Predictive Analytics Laboratory in Health (LABDAPS – University of São Paulo), the MARCH (Maternal, Adolescent, Reproductive and Child Health) Research Group at the London School of Hygiene Tropical Medicine (LSHTM), Rede CoVida in Brazil, and the Epidemiology, Statistics and Applied Mathematics to Infectious and Parasitic Diseases Research Group at the Federal University of Mato Grosso do Sul (UFMS). My main research interests focus on quantitative methods applied to public health, including descriptive, inferential and Bayesian statistics, mathematical modeling, and predictive approaches using machine learning algorithms. My work aims to contribute to global health by generating evidence to inform public health decision-making and policy. In my daily activities, I routinely use SPSS, Stata, R and Python to develop data-driven solutions for public health challenges.

Interests: Epidemiology; Cardiovascular Diseases; Fetal Programming; Maternal and Child Health; Nutrition; Biostatistics; Infectious Diseases; Public Health; Health Data Science; Machine Learning; Artificial Intelligence; Food Environment; Health Inequalities; Big Data and Predictive Modelling.

Education

- **2025–Present: Postdoctoral Researcher in Health Data Science**
  London School of Hygiene & Tropical Medicine (LSHTM), UK.
  Project: Predictive Modelling of Stillbirths and Neonatal Deaths Using Multi-Country Cohorts.
  Supervisors: Eric Ohuma and Joe Akuze.

- **2025–2025: Ph.D. in Epidemiology – Visiting Fellowship (FAPESP)**
  London School of Hygiene & Tropical Medicine (LSHTM), UK.
  Title: Structural Equation Modelling and Machine Learning for Predicting Fetal Growth Based on Gestational Weight Gain: Araraquara Cohort Study.
  Advisor: Eric Ohuma.

- **2022–2025: Ph.D. in Public Health – Epidemiology**
  University of São Paulo (USP), Brazil.
  Title: Gestational weight gain and its effects on fetal growth, neonatal outcomes, and maternal mental health: Integration of Machine Learning models and Generalized Estimating Equations in cohort studies in Araraquara and Jundiaí.
  Advisor: Patrícia Helen de Carvalho Rondó. *Co-advisor:* Alexandre Dias Porto Chiavegatto Filho.

- **2020–2021: Masters in Public Health – Epidemiology**
  Federal University of Bahia (UFBA), Brazil.
  Thesis Title: Influence of Food Environments on Premature Cardiovascular Mortality in Brazil.
  Advisor: Rita de Cássia Ribeiro Silva.

- **2022–2024: MBA in Data Science & Analytics**
  University of São Paulo (USP), Brazil.
  Project Title: Development of a Predictive Model for Low Birth Weight Using Machine Learning Algorithms.
  Advisor: Francielly Almeida.

- **2024–2025: MBA in Artificial Intelligence and Big Data**
  Institute of Mathematical and Computer Sciences (ICMC) – USP, Brazil.
  Project Title: Machine learning models for fetal weight estimation based on ultrasound biometry.
  Advisor: Ricardo Cerri.

- **2024–2026: MBA in Project Management**
  University of São Paulo (USP), Brazil.
  Project Title: Application of project management methodologies in longitudinal epidemiological research: a proposed governance framework.
  Advisor: Fabiana Da Silva Podeleski.

- **2022–2023: Postgraduate Diploma in Public Health (Monitoring and Evaluation of Strategic Health Information)**
  Federal University of Bahia (UFBA-ISC), Brazil.
  Project Title: Ethics and justice in the implementation of big data algorithms in healthcare services: focus on the use of artificial intelligence.
  Advisor: Adriana Galdino Batista Pereira.

- **2012–2015: Bachelor's in Human Nutrition**

Lúrio University, Mozambique (exchange at Federal University of Viçosa, Brazil).
Thesis Title: Socioeconomic Profile and Lifestyle in Patients with Type II Diabetes Mellitus Treated at the Central Hospital.
Advisor: David Comala.

- **2023–2027: Bachelor's in Economics (In Progress)**
  Catholic University of Brasília, Brazil.

Additional Education

- 2026: Introduction to Data Analysis for Research in the Brazilian Public Health System (SUS) (50h) — Oswaldo Cruz Foundation (FIOCRUZ), Brazil.
- 2024: Artificial Intelligence — Institute of Mathematical and Computer Sciences (ICMC), University of São Paulo.
- 2023: Summer Course: Machine Learning for Health Predictions — University of São Paulo.
- 2023: Fundamentals of Statistics, Introduction to R Software and Machine Learning — University of São Paulo.
- 2022: Introduction to Biomedical Data Science and Machine Learning (10h) — ISGLOBAL, Spain.
- 2022: Health Impact Assessment: Principles and Practices (10h) — ISGLOBAL, Spain.
- 2021: English Course Level VI (60h) — NUPEL, Federal University of Bahia (UFBA), Brazil.
- 2021: Academic Text Reading and Writing Course (60h) — NUPEL, UFBA, Brazil.
- 2021: French Course Level V (60h) — NUPEL, UFBA, Brazil.
- 2020: Extension in Statistical Software Handling (STATA) (16h) — UFBA, Brazil.
- 2020: Systematic Review and Meta-Analysis Course (40h) — State University of Campinas (UNICAMP), Brazil.
- 2020: English Course Level V (60h) — NUPEL, UFBA, Brazil.
- 2019: Design and Development of HIV Prevention Programs for Key Populations (64h) — Johns Hopkins University, USA.
- 2019: Humanitarian Crises (84h) — LSHTM, UK.
- 2018: Certified IPC Analyst (Classification of Malnutrition) (95h) — Ministry of Health, Mozambique.
- 2018: Monitoring and Evaluation in Health Programs (82h) — Johns Hopkins University, USA.
- 2017: Social and Behavioral Change Communication Strategy (45h) — Ministry of Health, Mozambique.
- 2016: Training of Trainers in the Nutritional Rehabilitation Program (75h) — Ministry of Health, Mozambique.
- 2016: Nutritional Assessment in Nutritional Emergencies (ENA) (32h) — UNICEF.

Professional Experience

Researcher in Health Data Science – London School of Hygiene & Tropical Medicine (LSHTM), University of London, United Kingdom Jul 2025 – Present

- Developing predictive models for stillbirths and neonatal deaths using classical statistics (e.g., logistic regression), machine learning (e.g., random forest, XGBoost), and AI approaches (e.g., neural networks, ensemble methods).
- Managing and analysing large multi-country datasets (>280,000 birth records) from 15 African countries, integrating facility- and population-based sources.
- Designing reproducible data pipelines and implementing validation frameworks (cross-validation, AUC, AIC/BIC) to ensure model robustness and generalisability.
- Collaborating with researchers, ministries of health, and global partners to translate findings into actionable strategies for maternal and newborn health.
- Supporting data harmonisation, secure data sharing, and governance using tools like R, Python, MLflow, and SharePoint.
- Contributing to manuscripts, reports, and capacity building activities within the MARCH Centre and the Maternal & Newborn Health Group.

Epidemiologist in RWE – PAHO/WHO, Brasília, Brazil Sep 2023 – Nov 2024

- Provided technical consulting to the Ministry of Health via the Coordination-General for Surveillance of Infectious Diseases (CGVDI/SVSA/MS), focusing on COVID-19 indicators analysis.
- Used advanced data analysis techniques to interpret COVID-19 trends, providing essential insights for public health decision-making and resource allocation.
- Monitored disease trends and provided strategic recommendations to prevent virus spread.
- Evaluated the health system's response capacity to face the pandemic, informing optimization strategies.
- Contributed to developing and adjusting national health policies and guidelines to mitigate the pandemic.
- Collaborated with health professionals and communicated evidence-based guidelines to the public.

Epidemiologist/Data Scientist) – Epidemiological Surveillance Center "Prof. Alexandre Vranjac" / São Paulo State Department of Health, São Paulo, Brazil Jul 2024 – Dec 2024

- Conducted spatial analyses to identify high-risk areas for respiratory diseases, guiding strategic interventions.
- Performed nowcasting and forecasting for diseases such as meningitis, influenza, and COVID-19.
- Developed predictive models to support strategic decision-making and optimize health interventions.
- Created intuitive data visualizations to effectively communicate insights to policymakers and health professionals.

Scientific Curator and Data Analyst | Public Policy Specialist – Pact Against Hunger, São Paulo, Brazil (Remote) Nov 2023 – Feb 2025

- Translated scientific complexities into actionable insights for effective policymaking.
- Identified, evaluated, and synthesized relevant scientific research and data, providing accurate and updated information for policy decisions.
- Used statistical and data science techniques to analyze large datasets, identifying trends and insights to support public policy formulation and evaluation.
- Actively contributed to developing, implementing, and evaluating public policies using a data-driven approach.
- Facilitated communication between the scientific community and policymakers, making scientific findings accessible and relevant.
- Led evidence-based policy projects, ensuring policies were sustainable, effective, and tailored to population needs.

Data Scientist/Researcher – Big Data and Predictive Health Analytics Laboratory (LABDAPS), USP, Brazil 2022 – Present

- Specialized in Public Health Data Science, committed to using advanced analytics and scientific research to address complex health challenges and improve community health outcomes.
- Applied advanced statistical models and machine learning algorithms for disease outbreak prediction, health risk assessment, and resource optimization in public health projects.
- Developed intuitive data visualizations and technical reports to communicate complex insights to diverse audiences, including policymakers and health professionals.
- Collaborated closely with epidemiologists, health professionals, and policymakers to create evidence-based solutions for public health issues.
- Investigated new technologies and data analysis methodologies to improve public health research and application.
- Authored scientific articles and supervised undergraduate students.

Ministry of Health, Mozambique 2016 – 2023

- *2016–2019: Nutrition Program Manager at Maganja da Costa District, Mozambique.*
  Managed the Nutrition Program at Maganja da Costa Health Services, coordinating with other departments and programs (SMI, HIV, TB). Analyzed program performance data and provided timely feedback; mapped program implementation and partner support; planned and facilitated training; ensured stock control; compiled and interpreted indicators; produced reports with action proposals.
- *2017–2018: Scientific Director at Maganja da Costa District Hospital, Mozambique.*
  Led research and development activities; trained professionals in scientific research; disseminated findings to the community.
- *2018–2019: Focal Point for the Konzo Disease Mitigation Program.*
  Organized lectures and workshops; developed educational materials; conducted epidemiological surveys; collaborated to improve access to potable water and sanitation; promoted education on healthy diet and hygiene.

- *Feb–May 2015: Community Nutritionist Volunteer at Helpo NGO, Nampula.*
  Monitored health status of sponsored children; provided nutritional guidance; conducted community education; culinary demonstrations; produced educational pamphlets.

- *Jan 2015–2018: Focal Point for Nutrition and Food Security Research (SETSAN) in Zambezia.*
  Participated in vulnerability and food security assessments; supervised surveys across districts.

- *Jan–Jun 2015: Clinical Nutritionist at Magan Medical Center, Nampula.*
  Developed dietary plans, promoted healthy habits, produced educational materials.

- *Sep–Dec 2015: Nutrition Officer at "Save The Children".*
  Led community nutrition projects; mass malnutrition screening; referrals; trained activists; M&E; produced educational materials.

Consultancies

- **Scientific Consultant in Social Indicators and Microdata Analysis — Rights of Persons with Disabilities Project (PNUD BRA/18/008)**
  United Nations Development Programme (UNDP/PNUD) & Brazilian Ministry of Human Rights and Citizenship (MDHC), Brazil Jan 2026 – Present
  Consultancy under UNDP Project BRA/18/008 "Strengthening the Guarantee and Promotion of the Rights of Persons with Disabilities", supporting the National Secretariat for the Rights of Persons with Disabilities (SNDPD). Responsible for the development of national social and economic indicators for persons with disabilities using large-scale microdata (PNADc, Census, RAIS, CadÚnico, PNS), international benchmarking, multidimensional poverty metrics, labour market inclusion analyses, and monitoring frameworks for the National Plan "Novo Viver Sem Limites".
  Outputs: Technical reports on international comparison, education and employability, quota law effectiveness, multidimensional poverty, and social vulnerability indicators (2026).

- **Scientific and Epidemiological Consultant — Impact of Influenza Vaccination on Hospitalizations and Deaths in Brazil and Evaluation of Alternative Vaccination Strategies**
  Brazilian Ministry of Health, Brazil, and Pan American Health Organization March 2026 – Present
  Consultancy on the nationwide evaluation of the impact of influenza vaccination on hospitalisations and deaths in Brazil, integrating burden-of-disease estimation, vaccine effectiveness parameters, and epidemiological modelling. The project assesses alternative vaccination timing strategies across regions and age groups to inform national immunisation policy and programme planning.
  Outputs: Scientific manuscript (in preparation); technical report; policy brief for PNI; internal analytical materials for the Ministry of Health.

- **Scientific and Epidemiological Consultant — Nirmatrelvir/Ritonavir (NMV/r) Effectiveness (COVID-19)**
  Brazilian Ministry of Health, Brazil Nov 2025 – Jan 2026
  Consultancy for nationwide evaluation of early NMV/r treatment and risk reduction for progression to Severe Acute Respiratory Syndrome (SARS) within 28 days, using target trial emulation and DAG-based causal inference with linked SUS databases.
  Outputs: Effectiveness report (2026); technical note for clinical guidance (in preparation); dashboard (internal, MS). Dashboard link

- **Scientific and Data Science Consultant — TQT Project (Testing, Isolation, Quarantine and Telemonitoring)**
  Primary Health Care COVID-19 Response Project, Salvador (BA) and Rio de Janeiro (RJ), Brazil Sep 2023 – Apr 2024
  Consultancy for the multisite intervention project on expansion of testing, e-health and telemonitoring strategies in socioeconomically vulnerable neighbourhoods at primary healthcare in Brazil. Led epidemiological data analysis, data quality assessment, descriptive analytics, dashboards, and reporting; supported scientific outputs and monitoring indicators.
  Outputs: Descriptive report (TQT dataset); monitoring dashboard; technical report (2023). link
  Publication: Home isolation capacity after Covid-19 diagnosis in vulnerable communities of two Brazilian cities: TQT Covid-19 Studyl (Rev Saúde Pública, 2026).
  https://doi.org/10.1371/journal.pone.0327140

- **Technical Consultant in Health (Epidemiologist and Data Scientist)** — PAHO/WHO, Brasília, Brazil Sep 2024 – Fev 2025
  Technical consulting to Brazil's Ministry of Health focused on COVID-19 surveillance indicators, epidemiological analyses, and evidence-informed guidance for decision-making.
  Outputs: Technical notes; weekly situation reports; national monitoring dashboards (internal).
  Publication: Factors associated with death from COVID-19 in traditional peoples and communities in Brazil (PLOS ONE, 2025).
  https://doi.org/10.1371/journal.pone.0327140

- **Technical Health Consultant (Epidemiologist/Data Scientist)** — Epidemiological Surveillance Center "Prof. Alexandre Vranjac" / São Paulo State Department of Health, Brazil Jul 2024 – Dec 2024
  Consulting support on spatial epidemiology, nowcasting/forecasting, and predictive modelling to guide public health actions for respiratory diseases.
  Outputs: Scientific publication and open-source implementation.
  Publication: Improving meningitis surveillance and diagnosis with machine learning: Insights from São Paulo (PLOS Digital Health, 2025).
  https://doi.org/10.1371/journal.pdig.0000925

Research Projects

Jan 2022 – Nov 2025: The Influence of Gestational Weight Gain on Fetal Growth and Neonatal Outcomes: The Araraquara Cohort Study

- *Description:* Evaluates whether gestational weight gain (GWG) outside IOM recommendations is associated with adverse maternal, fetal, and neonatal outcomes compared to adequate GWG.
- *Methodology:* Longitudinal prospective cohort study in Araraquara (SP), with women ≤ 19 weeks of gestation in prenatal care; machine learning algorithms used for outcome prediction.
- *Status:* Ongoing *Role:* PhD Candidate
  Collaborators: Patrícia Helen de Carvalho Rondó, Alexandre Dias Porto Chiavegatto Filho.

Sept 2023 – May 2024: Expansion of Testing, Quarantine, E-health, and Telemonitoring Strategies for COVID-19 Mitigation in Brazil

- *Description:* Intervention with four components: formative research; implementation of testing and telemonitoring in primary care; self-testing study; monitoring of new SARS-CoV-2 variants.

- *Status:* Ongoing *Role:* Researcher
  Collaborators: Laio Magno Santos de Sousa, Inês Dourado, Alexandre Grangeiro, Thais Aranha Rossi, Joilson Nascimento Paim, Carina Carvalho dos Santos, Sandra Garrido de Barros, Valdiléa Gonçalves Veloso.

Feb 2020 – Dec 2021: Influence of Food Environments on Premature Cardiovascular Disease Mortality in Brazil

- *Description:* Association between harmful food environments and premature cardiovascular mortality in 2016 using ecological cross-sectional data from 5,558 municipalities.

- *Status:* Completed *Role:* Coordinator
  Collaborators: Andrea Ferreira, Rita de Cássia Ribeiro Silva, Natanael Jesus da Silva. *Funding:* CAPES.

Editorial and Reviewer Roles

Editorial Member
2022 – Present: *Epidemiology International Journal (EIJ).*

Reviewer of Journals

- 2022 – Present: Journal of Multidisciplinary Healthcare; Research, Society and Development; Critical Reviews in Food Science and Nutrition.

- 2023 – Present: American Journal of Preventive Medicine; International Journal of Emergency Medicine; São Paulo Medical Journal; Medical Science Monitor; Current Computer-Aided Drug Design; Journal of Autonomous Intelligence; Annals of Gerontology and Geriatric Research.

- 2024 – Present: Health Sciences Journal; BMC Gastroenterology; Ciência & Saúde Coletiva; PLOS ONE; Maternal & Child Nutrition; PeerJ; Journal of Public Health; BMJ Open; Health Science Reports; Women's Health; Journal of Racial and Ethnic Health Disparities; BMC Pregnancy and Childbirth.

- 2025 – Present: JMIR Medical Informatics; Annals of Medicine; Digital Health; Communications Medicine; Discover Public Health.

- 2026 – Present: Epidemiologia e Serviços de Saúde; Biostatistics Epidemiology; BMC Infectious Diseases.

Conferences and Events

- **2024: 12th Brazilian Congress of Epidemiology** — Impact of Gestational Weight Gain on Neonatal Outcomes in the Araraquara Cohort; Social Inequalities in Low-Birth-Weight Trends in Brazil; Machine Learning for Mortality Prediction: Meta-analysis of 88 Studies.

- **2024: World Congress of Epidemiology** — The Impact of Gestational Weight Gain on Fetal and Neonatal Outcomes: The Araraquara Cohort Study, Brazil; Predictors of Nutritional Recovery Time in Children with Severe Acute Malnutrition in Mozambique: Survival Analysis Approach.
- **2023:** 1st Symposium on Artificial Intelligence Applied to Biomedical Sciences.
- **2023:** 31st International Symposium on Scientific and Technological Initiation at the University of São Paulo (SIICUSP).
- **2022: 3rd Brazilian Congress of Public Health – Abrascão** — Social Networks, Algorithms, Fake News: Is there a relation with the worsening of the COVID-19 health crisis in Brazil?
- **2022: III Health Journeys of the Central Region, Mozambique** — Prevalence of Alcohol Consumption among Pregnant Women Attending Prenatal Care in a Rural District of Tete, Mozambique.
- **2021:** I International Meeting on Mozambique Studies from Various Perspectives — Challenges Imposed by Non-Communicable Diseases in Mozambique.
- **2021:** III International Congress of Health and Nutrition, UNEMI, Ecuador — Influence of Food Environments on Premature Cardiovascular Mortality in Brazil.
- **2020:** COVID-19 Prevention Training for the "Corra para Abraço" Team, Bahia — Safety at Work and Health of Professionals during COVID-19.
- **2018:** III National Nutrition Congress and III Meeting of Nutritionists at the Lúrio University.
- **2016:** Technical Secretariat for Food and Nutrition Security Studies — Survey on Urban Vulnerability and Food Security in Nampula.
- **2015:** Exchange at Federal University of Viçosa, Brazil — Project funded by CAPES; International Pro-Mobility Research Support Project CAPES/AULP.
- **2015:** Seminar on Enteral and Parenteral Nutrition.
- **2014:** Study on Food Insecurity in Children under 5 Years Old (Lúrio University & Federal University of Viçosa, CAPES-supported).
- **2014:** I National Nutrition Congress and I Meeting of Nutritionists at Lúrio University.
- **2014:** Lúrio University Scientific Journeys — Nutritional Status Assessment in HIV Patients at Marrere General Hospital.
- **2013:** Quality Management System Seminar.
- **2012:** Study between Federal University of Minas Gerais (Brazil) and Lúrio University (Mozambique) — Assessment of Child Development in Different Contexts: Mozambique-Brazil Partnership.

Grants and Fellowships

1. **Doctoral Fellowship – Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brazil**
   Title: The Influence of Gestational Weight Gain on Fetal Growth and Neonatal Outcomes:

Araraquara Cohort Study.
Institution: University of São Paulo. *Advisor:* Prof. Patrícia Helen de Carvalho Rondó.
Period: Mar 2024 – Jan 2025. *Grant Number:* 2023/07936-3.
Funding: Total budget of R$ 120,000.00.

2. **Research Internship Abroad Fellowship (BEPE-FAPESP)**
Title: Research on Gestational Weight Gain Using Machine Learning Approaches.
Institution: London School of Hygiene & Tropical Medicine (LSHTM). *Supervisor:* Prof. Eric Ohuma.
Period: Jan 2025 – Nov 2025. *Grant Number:* 2024/18309-2.
Includes: £22,800.

3. **CNPq Grant – National Research Council of Brazil**
Title: GAS-Brazil Study: Algorithmic Generalization in Health Across the Five.
Institutions: University of São Paulo; Federal University of São Paulo; Imperial College London.
Period: Jan 2025 – Dec 2026. *Funding:* Total budget of R$ 275,389.70.

4. **CNPq Collaboration with CIDACS/FIOCRUZ**
Title: Influence of Air Temperature and Heat Waves on Nutritional Status and Child Feeding Practices in Brazil.
Institutions: UFBA/CIDACS/FIOCRUZ and LSHTM.
Period: 2025 – 2027. *Funding:* Total budget of R$ 509,48.00.

5. **CAPES Collaboration with UFBA (Master's Scholarship)**
Title: Influence of Food Environments on Premature Mortality from Cardiovascular Diseases in Brazil.
Institution: Federal University of Bahia (UFBA). *Period:* 2019 – 2021.
Funding: Total budget of BRL 36,000. *Advisor:* Rita de Cássia Ribeiro Silva.
Agency: CAPES (Coordination for the Improvement of Higher Education Personnel), Brazil.

Teaching Experience

- **Instructor (Post-Graduate), HNT-5707 – Methods for the Assessment of Nutritional Status of Populations** — University of São Paulo.
Co-taught with Prof. Patrícia Helen de Carvalho Rondó and Prof. Wolney Lisboa Conde; weekly 4-hour sessions (14:00–18:00). Delivered lectures and practicals on population-level nutritional assessment, anthropometry, biomarkers, survey methods, and R-based epidemiological data analysis.

- **Epidemiological Data Analysis in R** — University of São Paulo.
Designed and led hands-on sessions covering data cleaning, visualisation, regression modelling, and reproducible workflows (R Markdown, Git).

- **Statistical Methods in Epidemiology (SME)** — London School of Hygiene & Tropical Medicine.
Completed advanced training in statistical methods for epidemiology and applied these methods in teaching/practical sessions.

Supervisions and Advisories

- Titina Da Deolinda Mirrione: Relationship between Food Consumption and Nutritional Status of Children in Muatala Community (2017), Lúrio University.

- Quinho Zaona Muxirima: Evaluation of Hygiene-Sanitary Conditions in "Take-Away" Food Establishments in Nampula (2016), Lúrio University.
- Geraldo Bartolomeu Mateus: Nutritional Status and Eating Habits in Adolescents Aged 15–19 from Nampula Secondary School (2016), Lúrio University.

Publications (Peer-reviewed)

1. 2025. National and regional Temporal trends and forecasting of preterm birth in brazil: evidence from National birth data (2014–2023) with projections to 2030. *BMC Pregnancy and Childbirth*.DOI.
2. (2025).Implications for newborn and child growth classification using INTERGROWTH-21st and WHO child growth standards.*BJOG: An International Journal of Obstetrics & Gynaecology*. DOI.
3. 2026. Predictive models for stillbirths and neonatal deaths: protocol for a global scoping review with focus on sub-Saharan Africa. *Wellcome Open Research*. DOI.
4. 2026. Home isolation capacity after COVID-19 diagnosis in vulnerable communities of two Brazilian cities: TQT COVID-19 Study. *Revista de Saúde Pública*. DOI.
5. 2025. Global performance of machine learning models to predict all-cause mortality: systematic review and meta-analysis. *Scientific Report*. DOI.
6. 2025. Artificial intelligence in global health: An unfair future for health in Sub-Saharan Africa? *Health Affairs Scholar (Oxford University Press)*. DOI.
7. 2025. The role of artificial intelligence in maternal and child health: Progress, controversies, and future directions. *PLOS Digital Health*. DOI.
8. 2025. Risk factors for mental disorders in pregnant women in two cities from São Paulo, Brazil: A cohort study. *PLOS ONE*. DOI.
9. 2025. Prevalence and determinants of chronic non-communicable diseases among prison inmates in the city of Tete, Mozambique: a cross-sectional study. *BMC Public Health*. DOI.
10. 2025. Mental health and gestational weight gain: A comparison between Brazilian cohorts. *PLOS ONE*. DOI.
11. 2025. Nomogram predicting overall survival in hospitalized cervical cancer patients in Mato Grosso, Brazil. *Discover Oncology*, 16(1):1312. DOI.
12. 2025. Improving meningitis surveillance and diagnosis with machine learning: Insights from São Paulo. *PLOS Digital Health*. DOI.
13. 2025. Factors associated with death from COVID-19 in traditional peoples and communities in Brazil. *PLOS ONE*. DOI.
14. 2026. Novel clinical nomogram for predicting unfavourable tuberculosis treatment outcomes: A logistic regression risk model.*Journal of Epidemiology and Global Health*.DOI.
15. 2025. Predicting low birth weight risks in pregnant women in Brazil using machine learning algorithms: data from the Araraquara cohort study. *BMC Pregnancy and Childbirth*. DOI.
16. 2024. Predictive modeling of gestational weight gain: a machine learning multiclass classification study. *BMC Pregnancy and Childbirth*. DOI.

17. 2024. The impact of gestational weight gain on fetal and neonatal outcomes: the Araraquara Cohort Study. *BMC Pregnancy and Childbirth*. DOI.

18. 2024. Predictors of inadequate gestational weight gain according to IOM recommendations and Intergrowth-21st standards: the Araraquara Cohort Study. *BMC Pregnancy and Childbirth*. DOI.

19. 2024. Predictors of Nutritional Recovery Time in Children with Severe Acute Malnutrition in Mozambique: Survival Analysis Approach. *Journal of Public Health*. DOI.

20. 2024. Social Inequalities in Child Development: Analysis of Low-Birth-Weight Trends in Brazil, 2010–2020. *Journal of Prevention*. DOI.

21. 2024. Antibiotic prescribing patterns in pediatric patients using the WHO AWaRe classification at a quaternary hospital in Nampula, Mozambique. *Scientific Reports*. DOI.

22. 2023. Association between food environments and fetal growth in pregnant Brazilian women. *BMC Pregnancy and Childbirth*. DOI.

23. 2022. Influence of Unhealthy Food Environment on Premature Cardiovascular Disease Mortality in Brazil: An Ecologic Approach. *American Journal of Preventive Medicine*. DOI.

24. 2022. Inappropriate use of antibiotics and its predictors in pediatric patients admitted at the Central Hospital of Nampula, Mozambique. *Antimicrobial Resistance & Infection Control*. DOI.

25. 2022. Association Between Education Level and Premature Death from Cardiovascular Diseases in Adults in Brazil. *Research, Society and Development*. DOI.

26. 2022. Prevalence and Factors Associated with Food Insecurity Among Adults with HIV/AIDS Treated at a Reference Hospital in Mozambique. *Research, Society and Development*. DOI.

27. 2022. Demographic analysis of the population in Sofala Province and access to health services in Mozambique. *Research, Society and Development*. DOI.

28. 2025. Afro-diasporic food culture: ancestral bonds to strengthen the connection between Brazil and Africa. *Journal of Food and Afro-Diasporic Culture*, 6(1). DOI.

29. 2020. Social distancing measures in the control of the COVID-19 pandemic: potential impacts and challenges in Brazil. *Ciência & Saúde Coletiva*. DOI.

Manuscripts (Under Review, In Press and Submitted)

1. (2026). Machine Learning for Predicting Mortality in Women Diagnosed with Breast Cancer in the State of Mato Grosso, Brazil.
   PLOS Medicine — Submitted.

2. (2026). Development and Validation of Machine Learning Models and Clinical Nomograms for Predicting Overall and Breast Cancer-Specific Survival and Patient Risk Stratification.
   NPJ Nature — Submitted.

3. (2026).Association between Serum Vitamin D Levels and Gestational Weight Gain: Analysis of the Araraquara Cohort Study.
   BJOG — Submitted.

4. (2026).Maternal mortality among international and internal migrants in Brazil: A nationwide data linkage study (2011-2018).
   BMJ Public Health — Submitted.

5. (2026). Neonatal mortality data quality in Tanzania: Analysis of District Health Information System (DHIS) data from 28 Regional and 7 Tertiary hospitals (2015–2024).
   PLOS ONE — Submitted, under peer review.

6. (2025). Deep Learning–Based Classification of COVID-19 on Chest X-Ray Imaging: A Systematic Review. *BMC Medical Imaging* — Submitted (December 2025), with editor.

7. (2025). Inequalities in vaccination coverage among children aged 12–23 months in ten sub-Saharan African countries: Insights from Demographic and Health Surveys (2017–2022).
   BMC Public Health — Submitted.

8. (2025). Machine learning models for predicting childhood anemia in Mozambique: analysis from national survey data.
   BMC Pediatrics — Revision requested.

9. (2025). Machine Learning–Based Survival Modelling and Risk Assessment of Under-Five Mortality in Mozambique.
   npj Digital Medicine (Nature Portfolio) — Submitted (23 December 2025).

10. 2025. Machine learning for predicting hospital mortality in cervical cancer patients. *BMC Cancer* — With editor.

11. (2025). Prevalence and Risk Factors for Non-Communicable Chronic Diseases in Low and Middle-Income Countries: A Systematic Review and Meta-Analysis.
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22. 2025. Immediate causes of death among chronic treatable diseases in Brazil between 2013 and 2023. — Under peer review..

23. 2025. Gestational weight gain and maternal perinatal and postpartum outcomes in LMICs: Individual participant data meta-analyses (GWG Pooling Project). *Lancet* — Under peer review. (consortium member).

Languages

Portuguese (proficient in reading, writing, speaking, and comprehension); English (good understanding and reading; reasonable speaking and writing); Spanish (limited); French (limited).

Awards and Titles

Best Employee of the Maganja District — 2019, awarded by the Government of the Maganja District, Zambezia Province, Mozambique.

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