

Lucas Vasconcelos Vieira

Data Science · Statistical Modeling

✉ lucas@lvvieira.com 📞 +55 (14) 98164-5696 🌐 www.lvvieira.com 📄 www.linkedin.com/in/lvvieira



Applied Data Scientist with a Ph.D. in Agronomy (UNESP, Brazil) and an M.Sc. in Crop, Soil, and Environmental Sciences (University of Arkansas, USA), working at the intersection of data science, industrial operations, and decision-making. I work on improving real-world systems by integrating statistical modeling, data engineering, and applied analytics to address operational problems with direct business impact. My focus is on understanding complex processes, identifying key drivers, and converting data into decisions that increase efficiency, reduce costs, and improve overall system performance. My background combines statistical training with hands-on implementation in Python, R, and SQL, along with experience in data engineering and backend development. I build data pipelines, automated models, and analytical systems designed not just for analysis, but for continuous use in operational decision-making.

Languages: English · Portuguese

Technology: Python · R · SQL · PostgreSQL / PostGIS · SAS · Bash / Shell · JavaScript / HTML / CSS

Tools: Mixed Models (LMM / GLMM) · Experimental Design & Analysis · ETL Pipelines · GIS & Remote Sensing · REST APIs

EDUCATION

BS in Data Science and Information Technology

Virtual University of the State of São Paulo (UNIVESP)

2022 – 2025

São Paulo, Brazil

PhD in Agronomy

São Paulo State University (UNESP)

2017 – 2021

São Paulo, Brazil

MSc in Crop, Soil, and Environmental Sciences

University of Arkansas (UARK)

2014 – 2016

Arkansas, United States

BS in Biology

Vale do Acaraú State University (UVA)

2010 – 2014

Ceará, Brazil

EXPERIENCE

Senior Operational Performance Analyst

Combio Energia SA

Apr 2026 – Present

Piracicaba, São Paulo, Brazil

I work as a Senior Operational Performance Analyst at Combio Energia SA, where I focus on data-driven approaches to monitor, analyze, and improve operational processes, supporting strategic and performance-oriented decision-making across the organization.

Data Science Analyst

CTC - Centro de Tecnologia Canavieira

Out 2025 – Apr 2026

Piracicaba, São Paulo, Brazil

I worked as a Data Scientist supporting Sugarcane R&D at CTC (Centro de Tecnologia Canavieira), where I led the application of advanced statistical and experimental methodologies across large-scale field trials and research programs, enabling data-driven decision-making in genetic improvement, biotechnology development, and seed production systems. My work focused on multi-location and multi-year field trials, addressing complex experimental structures with hierarchical and unbalanced designs and enabling the evaluation of genotypes across diverse environments. I developed and deployed advanced statistical modeling frameworks, including linear and generalized linear mixed models and extensions for non-normal responses and heterogeneous variance structures, driving the modeling of disease resistance, yield components, and key agronomic traits and translating outputs into decision-oriented insights for breeders and agronomy teams. In parallel, I established reproducible, production-grade analytical pipelines spanning data processing, model development, and result synthesis, and designed analytical dashboards and reporting layers to operationalize insights, support real-time monitoring of key metrics, and directly inform strategic and operational decision-making across R&D programs.

Data Science Analyst

World Resources Institute (WRI) Brazil

Jul 2024 – Out 2025

São Paulo, São Paulo, Brazil

I worked as a Data Scientist in the Forests, Land Use, and Agriculture Program at WRI Brasil, where I developed and implemented data engineering solutions within the Data Management and Monitoring team. My work focused on structuring, processing, and analyzing complex datasets, including both geospatial and tabular data, to develop tools and methodologies that supported data-driven decision-making in forest restoration, sustainable land use, and environmental monitoring. I was responsible for designing and maintaining APIs and ETL pipelines optimized for geospatial data processing. This included developing spatial models, performing advanced analyses, and optimizing PostgreSQL/PostGIS queries to improve performance and scalability. I worked with multiple government data sources, including SICAR, MMA, FUNAI, PRODES, Global Forest Watch (GFW), SIGEF/INCRA, and IBGE, ensuring proper integration, standardization, and effective use of these datasets. In addition, I developed scalable REST APIs to enable real-time access and integration of geospatial data

across different platforms. I built geospatial solutions using GeoServer, GIS technologies, and Python, leveraging libraries such as GeoPandas, Shapely, Rasterio, and Fiona to design data pipelines, perform spatial analyses, and support environmental monitoring and management initiatives.

Data Science Researcher

Fiocruz Ceará

Jan 2024 – Jun 2024

Eusébio, Ceará, Brazil

I worked at Fiocruz Ceará on the project “Establish and strengthen the surveillance and genomic characterization of high-impact pathogens affecting the Brazilian population.” In this context, I developed data science and artificial intelligence solutions for genomic data analysis and epidemiological outbreak prediction. The experience involved integrating analytical pipelines with predictive models and machine learning techniques, contributing to active public health surveillance based on scientific evidence and real-time data.

Data Analyst

Doce Barreira (MBM Comércio de Doces e Frutas)

Jul 2023 – Dez 2023

Barreira, Ceará, Brazil

I worked as a Data Analyst at Doce Barreira, where I led data-driven initiatives to support operational and strategic decision-making across commercial and administrative functions. My role encompassed end-to-end data management, including data structuring, analysis, and modeling to generate actionable insights for business performance optimization. I designed and implemented a centralized data management system integrating inventory, sales, and cash flow processes, improving data consistency and enabling real-time visibility into key business metrics. I developed analytical solutions and automated reporting workflows, reducing manual effort and increasing operational efficiency. Additionally, I built dynamic dashboards using Excel/VBA to monitor financial performance and support decision-making. I also developed automation tools in Python and Bash within a Linux environment to streamline administrative processes, enhance data processing reliability, and support scalable data operations.

Data Scientist

Bradesco S/A (INOVA Talentos Fellowship)

Out 2022 – Jun 2023

Osasco, São Paulo, Brazil

I worked as a Data Scientist at Bradesco S/A under the INOVA Talentos, focusing on the development of data-driven solutions to improve operational efficiency and support strategic decision-making. I actively contributed to the transformation of traditional bank branches into business units, providing analytical support to enhance performance, optimize processes, and support operational restructuring. My role included identifying operational bottlenecks, defining key performance indicators (KPIs), and enabling data-driven decision-making within a large-scale organizational transformation context. I developed automation tools using programming languages to reduce manual workloads and increase operational productivity. I collaborated with cross-functional teams to implement innovative, data-driven solutions aligned with the institution’s strategic objectives.

Graduate Research Assistant

São Paulo State University (UNESP)

Ago 2017 – Jul 2021

Botucatu, São Paulo, Brazil

I worked as a Graduate Research Assistant at São Paulo State University (UNESP) as a CNPq (National Council for Scientific and Technological Development) Fellow, where I was responsible for designing and analyzing data from agronomic and biological experiments using mixed linear models. My work included estimating genetic parameters and genotypic values in unbalanced mixed linear models through multiple imputation and maximum likelihood estimation. I also developed covariance structures for genetic breeding programs and contributed as a research and teaching assistant. My experience involved advanced statistical modeling, experimental design, and collaboration in academic and research settings.

Graduate Research Assistant

University of Arkansas (UARK)

Ago 2014 – Jul 2016

Fayetteville, Arkansas, United States

I worked as a Graduate Research Assistant at the University of Arkansas as a CAPES (Coordination for the Improvement of Higher Education Personnel) Fellow, where I was responsible for designing, managing, and executing field and greenhouse experiments to evaluate crop performance related to nitrogen fertilization and planting dates. I also supported wheat breeding programs by conducting phenotyping, pollination, data collection, harvesting, and performing other tasks related to genetic improvement. My work contributed to enhancing crop productivity and optimizing agronomic practices through rigorous research and data analysis.

Research Assistant

EMBRAPA - Brazilian Agricultural Research Corporation

Ago 2013 – Jul 2014

Sobral, Ceará, Brazil

I worked as a Research Assistant at EMBRAPA as a CNPq (National Council for Scientific and Technological Development) Fellow, focusing on sustainable agricultural practices and soil management in the Semi-Arid region. My work involved the production and performance evaluation of organic compost derived from residues of small ruminant production and slaughter in the cultivation of maize and Gliricidia. I conducted biometric, biomass, and chlorophyll assessments of maize plants fertilized with organic compost and mineral fertilizers. My role also included evaluating the agronomic use of organic compost and analyzing the chemical alterations in soils under agroforestry and traditional systems managed organically. Additionally, I performed soil and plant sampling and conducted detailed laboratory analyses to support research outcomes.

Scientific Initiation Fellow

Universidade Estadual do Vale do Acaraú

Jan 2011 – Dec 2011

Sobral, Ceará, Brazil

I worked as a Research Assistant at the Vale do Acaraú State University (UVA) as a CNPq (National Council for Scientific and Technological Development) Fellow, where I was responsible for designing, managing, and conducting field and greenhouse experiments to evaluate the potential of native species for agroforestry systems. My work included assessing carbon stock in pioneer areas of secondary succession within the Caatinga biome of the Ceará Sertão. I also contributed to the production, collection, evaluation, and storage of seeds from woody and forage species native to the Caatinga. Additionally, I played a key role in the restoration and sustainable pastoral management of degraded areas on Planosol and Luvisol soils in the municipality of Irauçuba, Northern Sertão of Ceará.

PUBLICATIONS

Parametric Models of Covariance Matrices for Repeated Measures — *Journal of Agricultural Science. Canadian Center of Science and Education*, 2021.

Principal Component Analysis for Identification of Superior Castor Bean Hybrids — *Journal of Agricultural Science. Canadian Center of Science and Education*, 2019.

Association Mapping Reveals Loci Associated with Multiple Traits in Soft Winter Wheat — *Euphytica. Springer*, 2017.

Different Sources of Nitrogen Fertilizer in Rainfed Maize in a Semiarid Environment — *Arid Land Research and Management. Taylor & Francis*, 2023.

Use of Organic Compost Containing Waste from Ruminants in Corn Production — *Revista Brasileira de Ciência do Solo. SBCS*, 2016.