







Willian Vieira PhD

Data analyst and modelling specialist with a PhD in quantitative ecology. I build mathematical and statistical models using reproducible data workflows that turn complex data into validated, explainable outputs for operational decisions.






DATA SCIENCE & ENGINEERING EXPERIENCE

- Data Analyst & developer**
Habitat, Montreal, Canada
Built Python/R analytical pipelines and data-processing workflows that turned messy real-world project data into standardized, validated model inputs, reports, and decision-ready outputs | Developed metadata-driven ETL, data modelling, and provenance workflows so datasets, definitions, analyses, and handoffs remained traceable, reproducible, and inspectable | Led the transition to a Unix-based production environment using Docker, CI/CD, automated testing, documentation, and collaborative development practices | Designed cloud/Azure-oriented data infrastructure that made heterogeneous analytical datasets easier to retrieve, validate, and reuse
- PhD Research**
Integrative Ecology Lab, Sherbrooke, Canada
Formulated, implemented, and validated mathematical/statistical models for forest dynamics, including Bayesian hierarchical models, simulation workflows, regression-style evaluation, and historical-data routines for noisy, biased, incomplete data | Extracted signal from large historical datasets by harmonizing field inventories, climate, satellite, and spatial covariates into modelling-ready inputs with explicit assumptions and validation checks | Ran thousands of simulations on HPC infrastructure () to test algorithmic assumptions, compare model behavior, and scale analyses beyond local compute | Developed open-source software libraries (, ) for demographic modelling with version control, automated testing, documentation, and reusable workflows | Published a **technical methods book** documenting the full computational pipeline, along with one peer-reviewed **publication** and two preprints (, )
- Biostatistician**
Environment and Climate Change Canada - Quebec, Canada
Developed a cost-aware probability sampling protocol to improve the spatial representativeness of boreal bird surveys in Quebec under operational constraints | Led client-facing R&D on spatial bias-correction methods for large-scale ecological monitoring data, translating requirements into a method later adopted by other provinces | Engineered a fully automated and reproducible **data pipeline** with version-controlled workflows, automated documentation, and stakeholder-ready analytical outputs

EDUCATION

- PhD, Ecology**
Université de Sherbrooke - Sherbrooke, Canada
 *How climate, competition, and forest management shape the limits of tree species distributions: from individuals to metapopulations*
- Masters 2, Agroecology and Resource Management**
Bordeaux Sciences Agro, Bordeaux, France
 *Modelling the dispersion of weed species in agricultural landscapes*
- BSc in Agronomy**
Universidade Federal de Santa Catarina, Florianópolis, Brazil

CONTACT

-  (263) 381-3636
-  w.vieiraw@gmail.com
-  [LinkedIn/WillVieira](#)
-  [GitHub/WillVieira](#)
-  [Publications](#)

SKILLS

Statistics & Decision Analytics:
Regression · Bayesian inference · Hierarchical models · Predictive modelling · Model validation · Uncertainty · Anomaly investigation

Programming & Database:
Python · R · SQL · Stan · Julia · DuckDB · Bash

Data Engineering & Reporting:
ETL/ELT · Data modelling · Data cleaning · BI-ready reporting · APIs · Azure · AWS · Docker · Parquet · HPC

DevOps & Reproducibility:
Git · CI/CD · Unix · Unit testing · Make · Quarto · Jupyter · Automated validation

OUTREACH

· Developed and maintained the **QCBS R Workshop Series**, reaching nearly one thousand graduate students · Taught programming, statistics, SQL, and reproducible workflows to 250+ students across biology, engineering, and graduate programs · Translated stakeholder needs into technical analyses, documented pipelines, and clear analytical outputs

LANGUAGES

Portuguese · Native
French · Full Professional
English · Full Professional