

Antoine Lucas

SCIENTIFIC SOFTWARE & AI ENGINEER · R SHINY, LLM AGENTS, MLOPS

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Summary

Research engineer with 5+ years turning R&D problems into production software in pharma, cosmetics, and biotech. Maintain 20+ R Shiny applications used daily by researchers, plus statistical modelling (design of experiments, mixed models, multi-omics) and GxP-qualifiable delivery with tests, CI/CD and containers. Build LLM agents and MCP servers that put typed statistical tools in a model's hands.

Experience

Data Scientist & ML Engineer

Chanel Parfums Beauté R&D · via Astek / IT&M Stats

Sep 2025 – present

- Own the R Shiny application catalog used daily by researchers, covering clinical data visualisation, formulation automation, and data lifecycle workflows.
- Designed and deployed computer-vision applications used by dozens of researchers and technicians to segment and annotate microscopy elements for cosmetics formulation and regulatory R&D.
- Run the delivery toolchain (Git, Azure ML, Posit Connect, Databricks): reproducible environments and documented handover.

Data Scientist · Internal & Consulting

Astek / IT&M Stats

May – Sep 2025

- Led internal training on Bayesian statistics in R for consultants.
- Built reusable internal R packages and Quarto reporting templates used across missions.
- Fine-tuned Phi-3-mini (3.8B) with LoRA (PEFT) for claim classification, from data preparation to evaluation.

Data Scientist · Multi-omics

Abolis · Microbiome Studio · via Astek / IT&M Stats

Dec 2024 – May 2025

- Built R and Python pipelines for tabular and large-scale omics data: genomics, transcriptomics, and metabolomics.
- Embedded as the sole data scientist in an 8-person startup team shipping a SaaS product (FastAPI, Vue.js).
- Advised agri-food partners on experimental design, analysis, and ML for multi-omics integration.

Data Scientist

Sanofi R&D · Manufacturing Chain · via Astek / IT&M Stats

Jul 2023 – Nov 2024

- Sole R Shiny developer and Scrum Master. Built R and Python applications that simulate manufacturing plant resource capacity across global sites, with 50+ daily users across 3 departments informing drug production planning.
- Owned delivery end to end: requirements, methodology, validation, workshops, UAT, and handover, with backlog and sprint ceremonies across researchers, managers, and project leads.

Biostatistician

L'Oréal R&I · Scientific Computing · via Astek / IT&M Stats

Nov 2021 – Jul 2023

- Wrote analysis methodologies and statistical analysis plans for proof-of-concept clinical studies and programmed the analyses in R. Delivered reports for more than 100 studies.
- Characterised clinical phenotypes across exposome, biophysical, omics, and microbiome data with multi-block, multivariate, and variable-selection methods.
- Proposed statistical methods with a senior statistician and built Bayesian-network visualisations for clinical datasets.

Earlier experience

- **Data Scientist Intern**, L'Oréal R&I · Augmented Beauty (Feb 2021 – Aug 2021). Built personalised hair-recommendation models from customer data.
- **Biostatistics Project Officer Intern**, Da Volterra · Metagenomics Team (Feb 2020 – Aug 2020). Prepared data and ran non-parametric analyses for gut-microbiome clinical studies.
- **Data Scientist Intern**, Flinders University · Digital Health Research Center (Sep 2019 – Jan 2020). Analysed wearables and digital-health data in R, from questionnaire design to results.

Education

Diplôme d'Ingénieur, Statistiques appliquées aux Sciences de la Vie

Institut Agro - Agrocampus Ouest, Rennes

2021

Master, Mathématiques Appliquées · Statistiques (double degree)

INSA Rennes · Agrocampus Ouest · Université Rennes 2 · ENSAI · ENSAE (joint programme)

2021

Skills

LLM & agents

MCP servers · tool-calling agents · agentic workflows · LLM evaluation · RAG · structured extraction

Apps & reporting

R Shiny (golem) · FastAPI · Quarto · ggplot2 · Plotly

Engineering & infra

Git · CI/CD · automated testing · Docker · GitHub Actions · Azure ML · Databricks · Posit Connect · uv · rv

Programming

Python · R · SQL · Bash

ML & AI

scikit-learn · PyTorch · Hugging Face · PEFT / LoRA · OpenCV

Statistics

DoE · mixed models · Bayesian optimisation · PLS · PERMANOVA · survival analysis · SPC

Certifications

- GitHub Foundations, GitHub (2024)
- Scrum Master, Agilbee (2023)

Languages

- French (native)
- English (fluent)