

Between **HYPE** & REALITY

Posit's Blueprint for Responsible
GenAI in Life Sciences

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WHAT WE PROMISED TO COVER

1

How can
Pharmaceutical
companies leverage
GenAI tools
responsibly?

2

What must be true
for that to be the
case?

3

How do we build the
right checks and
balances for AI
Governance, including
quality, validation, and
reproducibility?

WHO IS POSIT?

2009

 Studio

RStudio founded
Mission: open-source
tools for data science



Thousands of
organizations.
A majority of the
world's top
pharmaceutical
companies

AstraZeneca 

GSK 


novo nordisk



2019

Transitioned
from C-Corp to
Public Benefit
Corporation

Certified

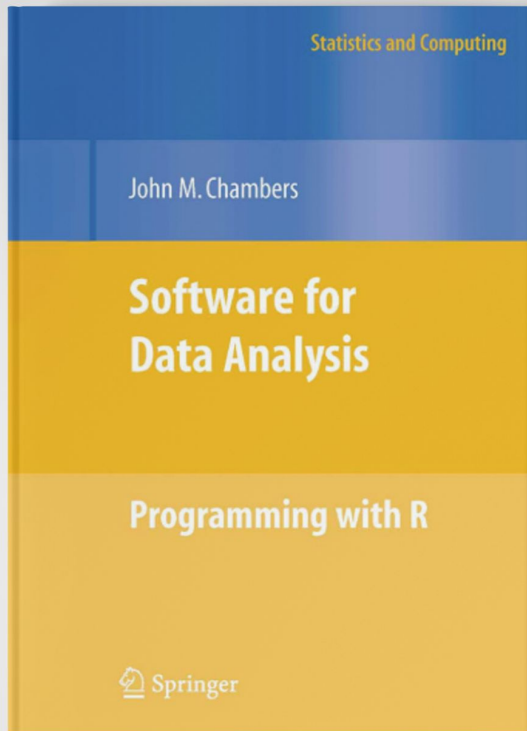
Corporation

2022



RStudio becomes
Posit, aligning to
the transition to a
multilingual world

THE PRIME DIRECTIVE



“

Those who receive the results of modern data analysis have limited opportunity to verify the results by direct observation. Users of the analysis have no option but to trust the analysis, and by extension the software that produced it... This places an obligation on all creators of software to program in such a way that the computations can be understood and trusted. **This obligation I label the Prime Directive.**”

John M. Chambers, §1.2

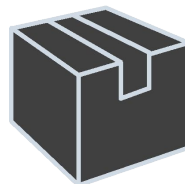
WHY CODE FIRST



CODE FIRST

- Transparent
- Reproducible
- Auditable
- Version-controlled
- > **The Prime Directive satisfied**

VS



BLACK BOX

- Opaque
- Hard to reproduce
- Difficult to audit
- Hard to version
- > **The Prime Directive is unmet**

TWO STRANDS, ONE JOURNEY



STRAND 1

GenAI in Serious Science:
can it add real value in
regulated data science, and
what needs to be true for that?

STRAND 2

The Human Side of Change:
how do we actually adapt as
individuals, as teams, as a
profession?

THE FOUNDATION WE STAND ON



Positron

quarto

GSK



tidyverse



- 2025 Positron, a polyglot IDE for the data science teams
- 2022 Quarto, the next generation of reproducible scientific publishing
- 2021 Pharmaverse, the community-built end-to-end clinical reporting ecosystem
- 2020–2022 First R-based regulatory submissions to the FDA *Roche, Novo Nordisk, GSK, Johnson & Johnson*
- 2016 Tidyverse, a coherent, expressive grammar for data science
- 2014 R Markdown for reproducible analysis at scale
- 2012 Shiny, interactive data applications for scientists
- 2011 RStudio IDE, the environment that made R accessible

FOUR MILESTONE MOMENTS

A horizontal timeline with four light blue rectangular boxes containing milestone dates. The boxes are connected by a thin white line with small white circles at the junctions. The dates are: FEBRUARY 2024, FEBRUARY 2025, NOVEMBER 2025, and SPRING 2026.

FEBRUARY 2024

FEBRUARY 2025

NOVEMBER 2025

SPRING 2026

MINNEAPOLIS

Twenty customers.
Six leaders.

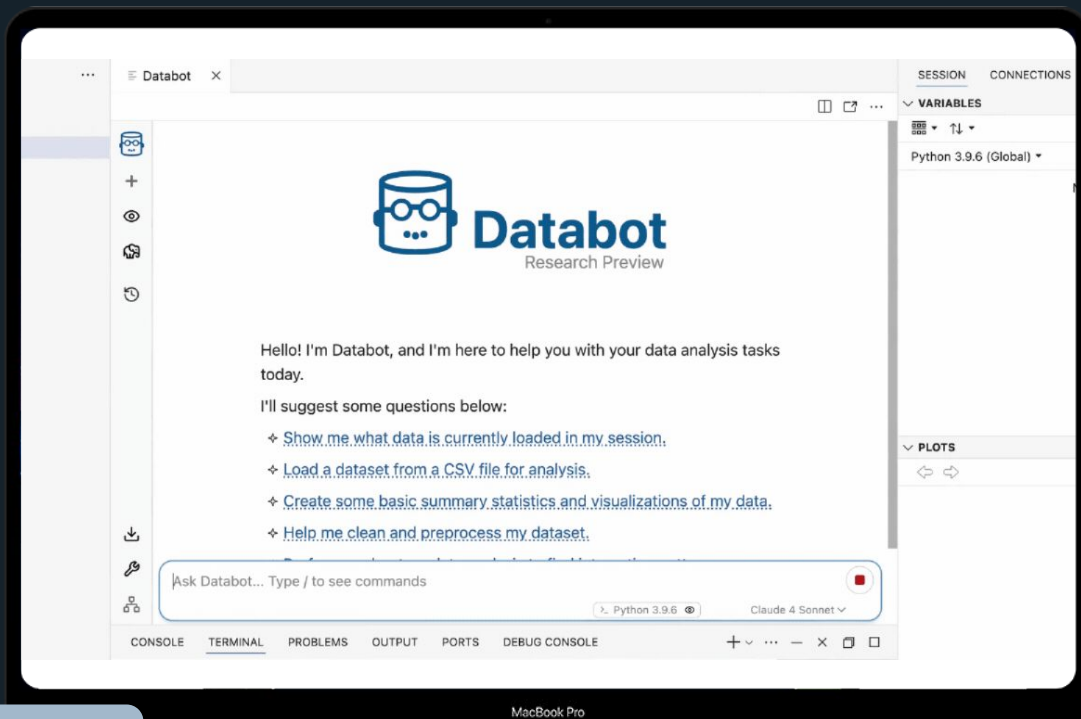
One question.



FEBRUARY 2024

DATABOT

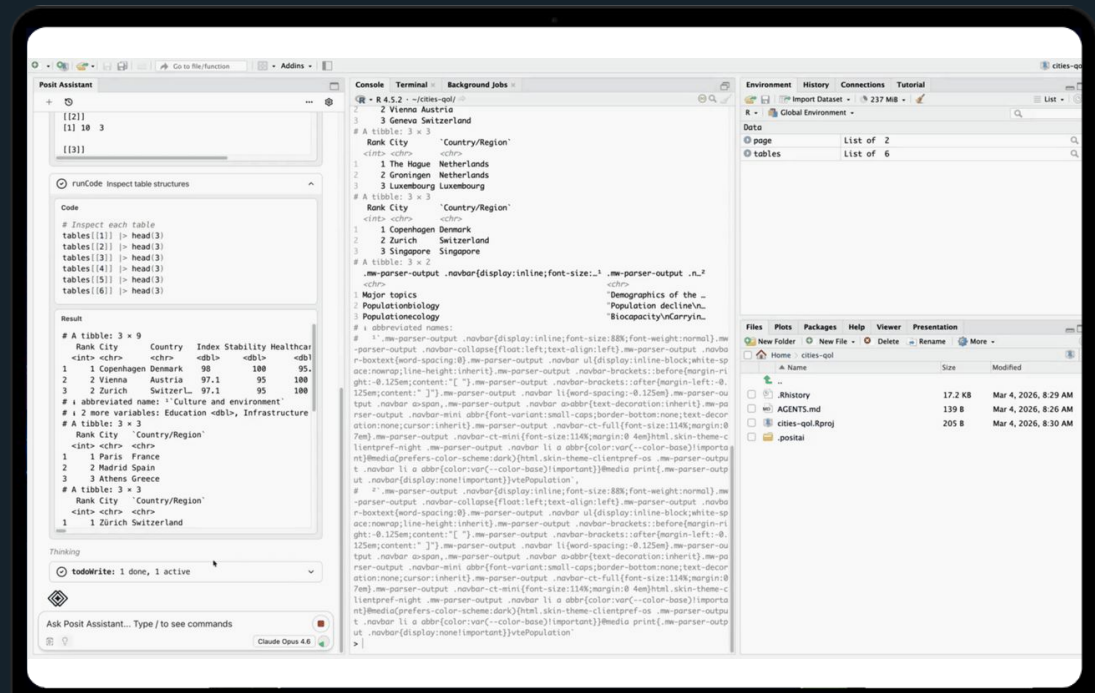
A dataset.
An unfamiliar domain.
Ten minutes.



FEBRUARY 2025

A QUANTUM LEAP

The ability to build, debug, and iterate on real software - **in real time** - crossed a threshold.



NOVEMBER 2025

WHERE WE ARE NOW

The question is no longer whether.

It is how.

The speed of change will not slow down

Everyone needs to learn to use these tools responsibly

Lagging adoption is a risk both organizationally and *personally*

SPRING 2026

FIVE OBJECTIONS WE HEAR REGULARLY

“

1. We cannot validate AI-generated code
2. AI will replace our statisticians
3. We can't trust the models with our data
4. We don't know which model to trust
5. We are simply not ready yet

”

*If you have said any of these, you are not alone.
We said some of them, too.*

OBJECTION 1

“

We cannot validate AI-generated code ”

*Human-in-the-loop is not a workaround.
It is the architecture.*

OBJECTION 2

“

AI will replace
our statisticians”



*Same profession.
Same commitment to the craft.*

OBJECTION 3

“

We can't trust
the models with
our data

”

Local Models



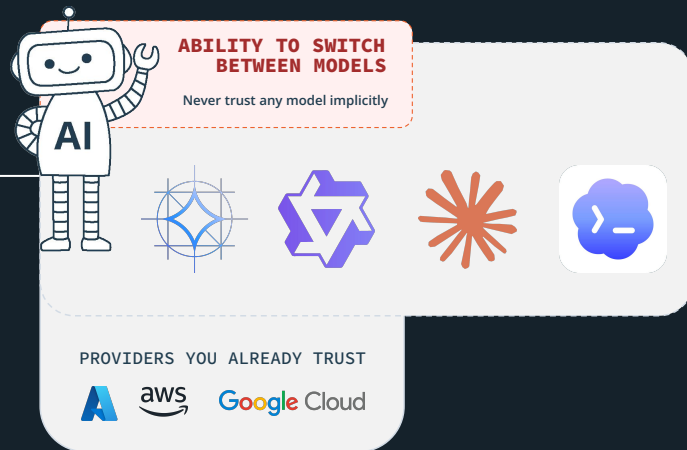
*This is a governance question,
not an AI question.*

OBJECTION 4

“

We don't know which model to trust

”



*You are not validating the AI.
You are validating the system around it.*

OBJECTION 5

“

We are not ready yet

”

RISK OF WAITING

- It takes time to develop the skills and instincts to use AI properly
- The tools are improving whether you engage or not
- Markets reward individuals and companies with a competitive advantages

RISK OF MOVING TOO FAST

- Unvalidated processes in regulated submissions
- Erosion of trust, internally and with regulators
- Loss of the human expertise that makes the technology valuable

FOUNDATIONAL PRINCIPLES

- 1** Code first, always
- 2** Human in the loop by design
- 3** Governed environments
- 4** Session-Aware, Data-Private

THE SECOND STRAND



Who actually wrote the code?

*The technical
problem is
hard*

*The human
problem is
harder*

WHAT DOES IT ACTUALLY TAKE TO CHANGE?

Three mindsets for navigating uncertainty

CURIOSITY

**CUSTOMER
CENTRICITY**

COURAGE

CURIOSITY

The drive to ask "Why?"

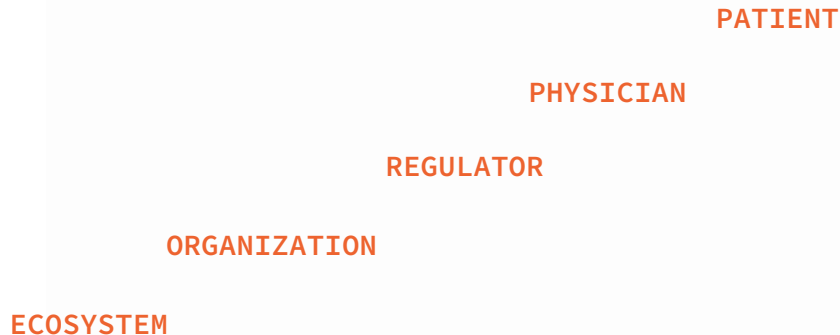
- and then "What if?"



CUSTOMER CENTRICITY

Who does your work ultimately serve?

All of them



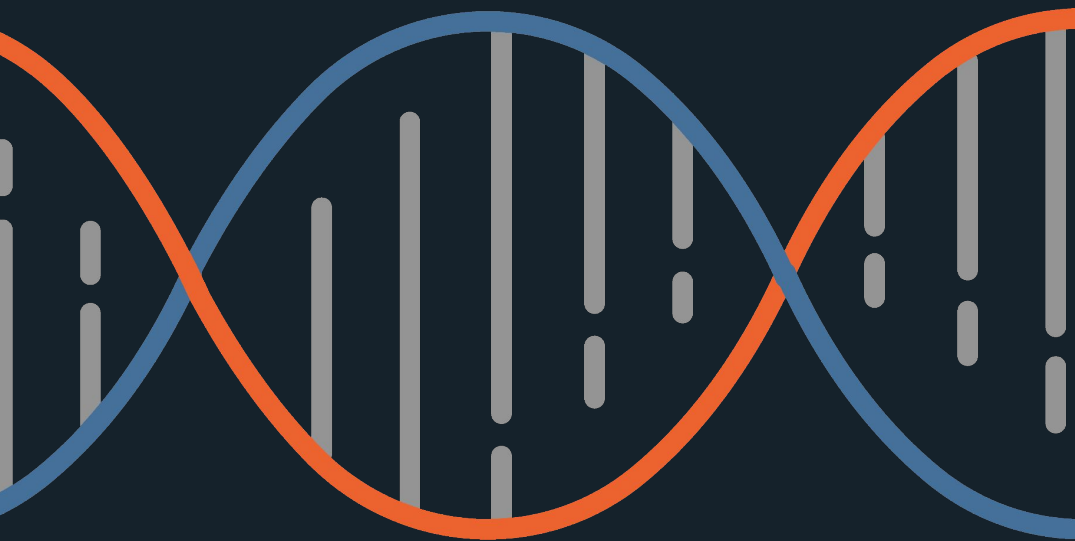
COURAGE

*The risk of not engaging is now larger than
the risk of engaging imperfectly*



THE CALL TO ACTION

Engage and shape your role in the new system



- Start with a bounded experiment. One use case.
- Demand that AI outputs are in code, every time.
- Keep the human in the loop by design, not by accident.
- Share what you learn. The Pharmaverse exists because the community was committed to sharing and learning.



We are here to help

Posit has been investing in code-first, reproducible, governed data science for seventeen years because the Prime Directive demanded it. We believe this rigor is even more critical in the AI era.

Our Commitments to You

Data Science taste and ergonomics

**Opinionated frameworks that are grounded
in trustworthy and reproducible work**

Portability and configurability

Questions ? LET'S TALK

posit.co

Continue the conversation with Tareef:

posit.it/tareef

or scan the QR code

