

The Evolution of the Role of (Nonclinical) Statisticians in an AI Era

Building AI fluency in Nonclinical Statistics
— by statisticians, for statisticians



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Johnson&Johnson
Innovative Medicine

AI is just software

Then why has it
disrupted our
daily roles so
much?

A Training Model is changing

Before

New software had fixed features.
A trainer mapped them.
You learned the menus.
Training was teachable because the tool was fixed.



Now

Many tools. Arriving fast.
Every one takes natural language as input.
Anyone can build one.
No fixed curriculum makes sense anymore.



We can't teach you everything:

Use-cases are flexible and role-specific

We can teach AI essentials:

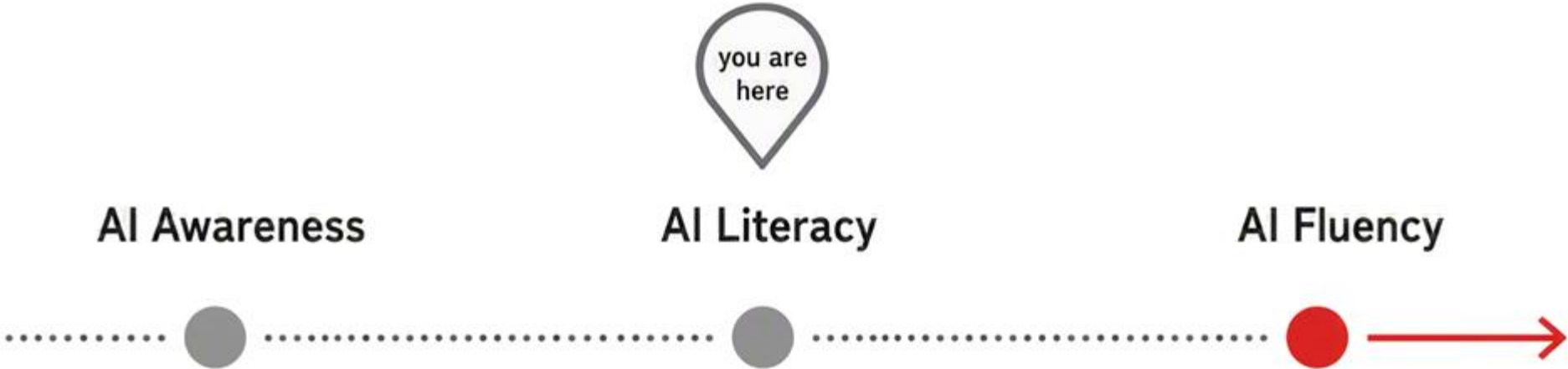
Experiment in low-risk settings *now*

You can share:

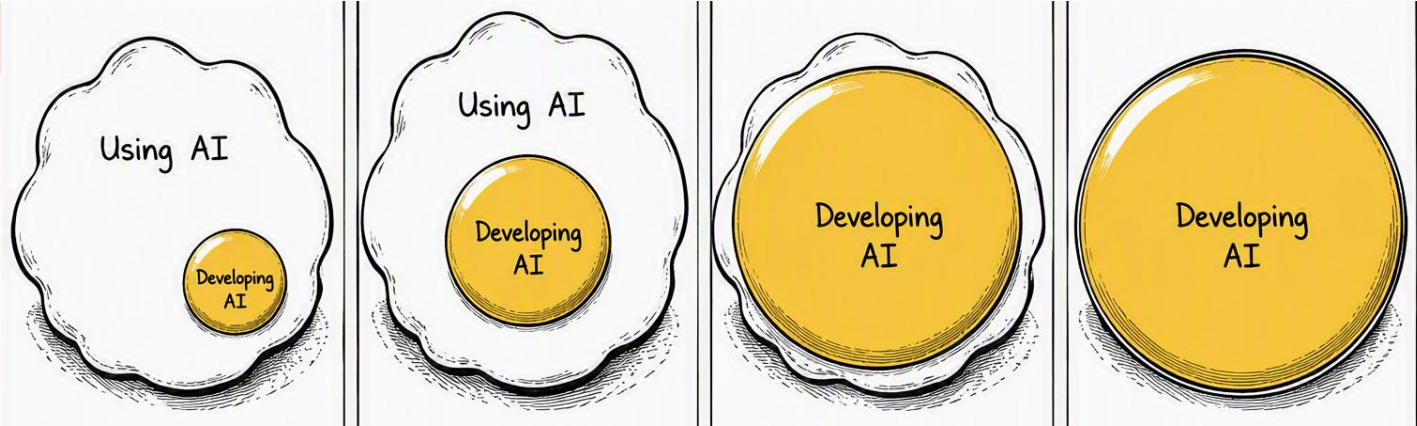
English context makes it easier

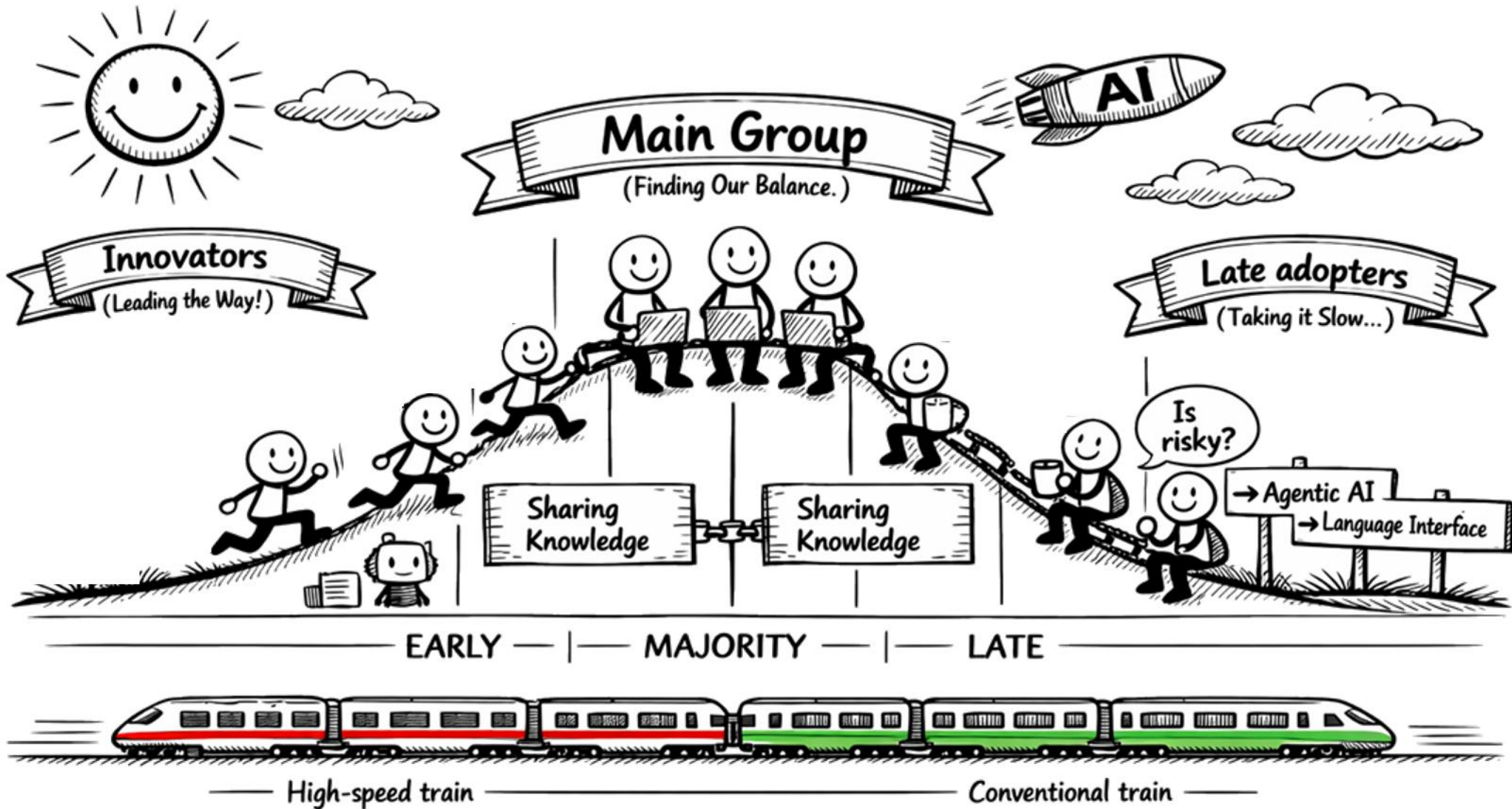
You and your colleagues are the best people
to train each other!

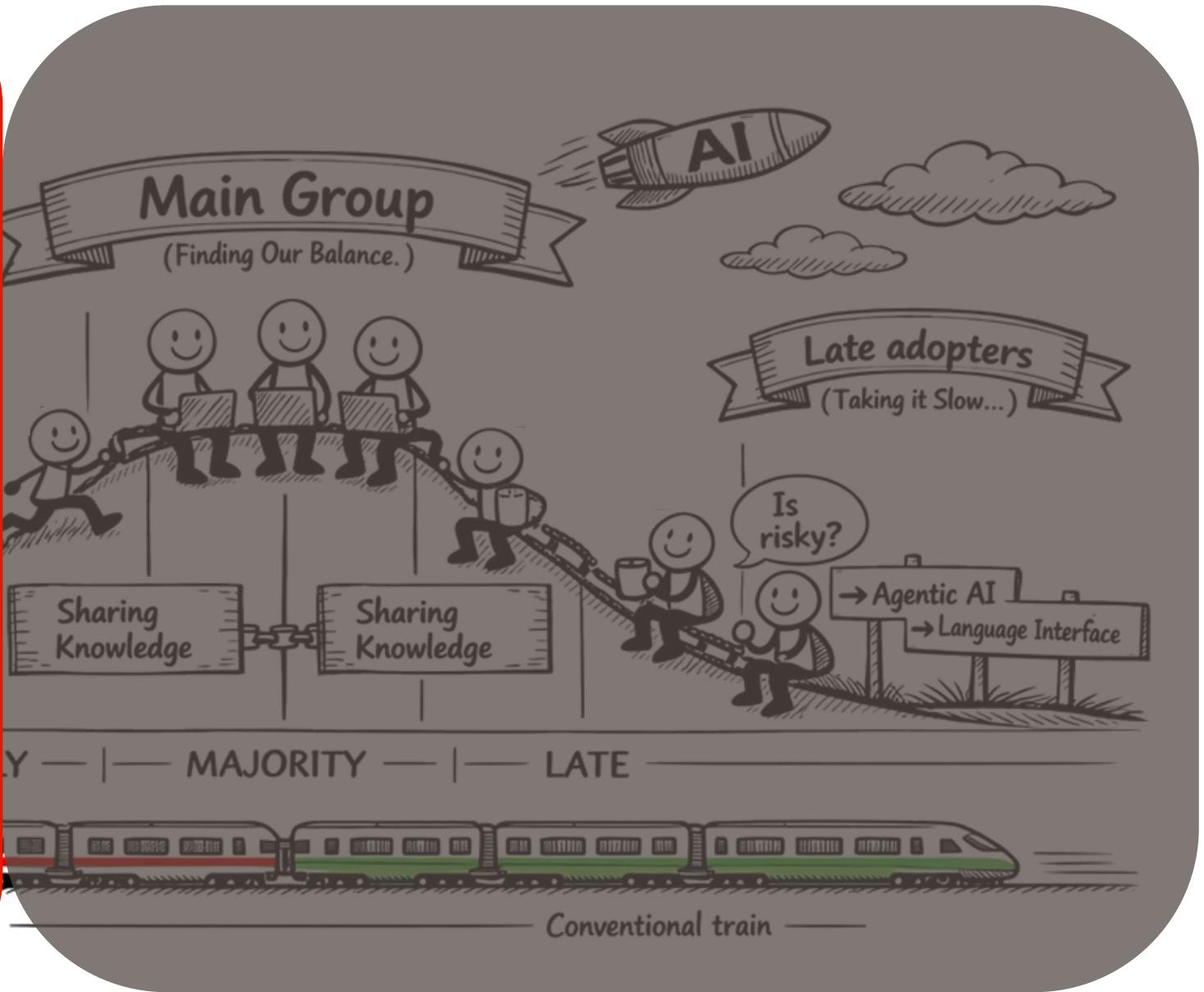
How we are training to AI fluency in practice



Track	Focus
Using AI	Copilots, Coding assistants
Developing AI	M365 agents, kiro agents, RAG, Predictive models, Governance







Non-Clinical Applied AI Forum

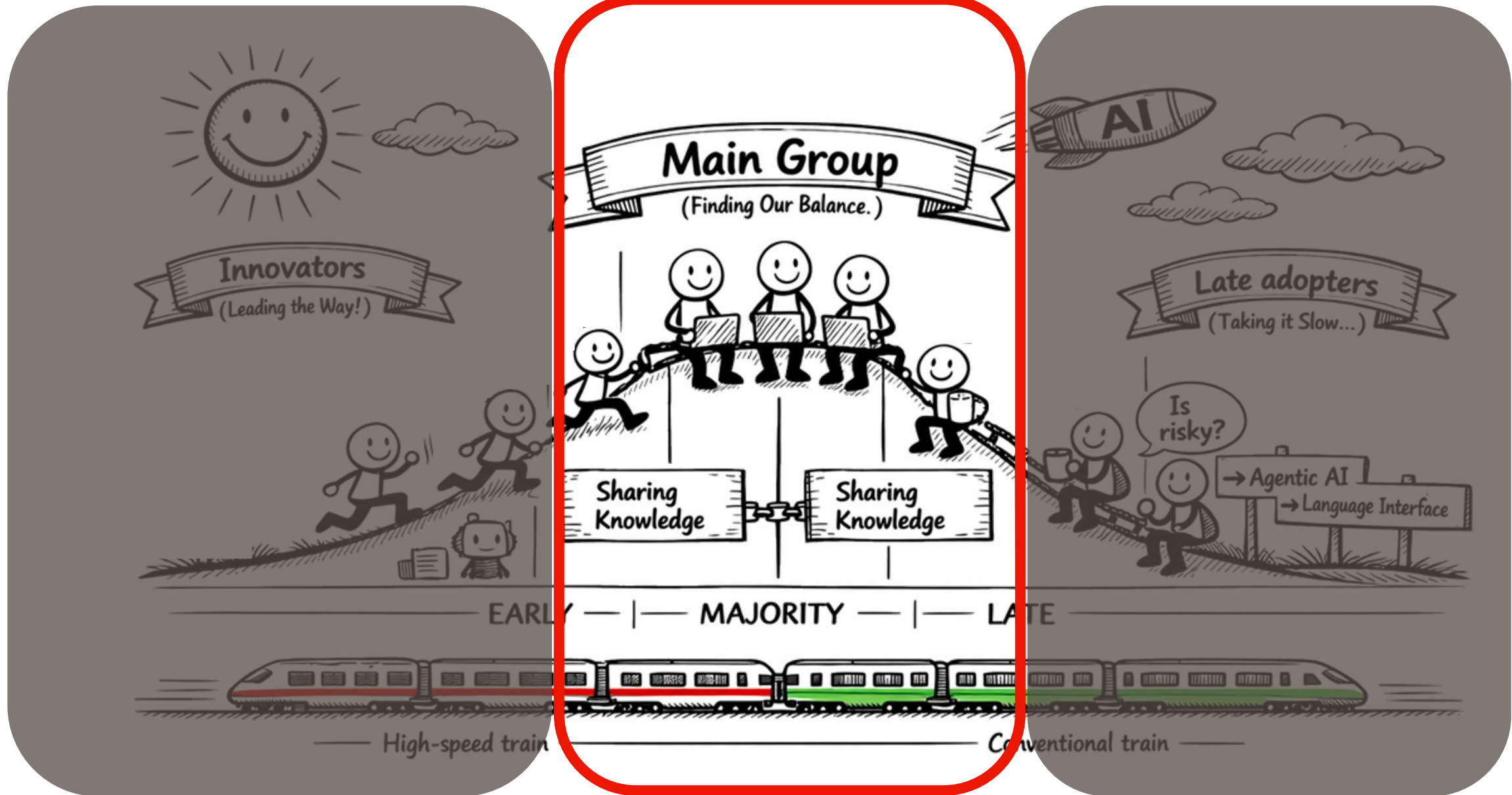
Informal by statisticians, for statisticians.
Learning together.

2025

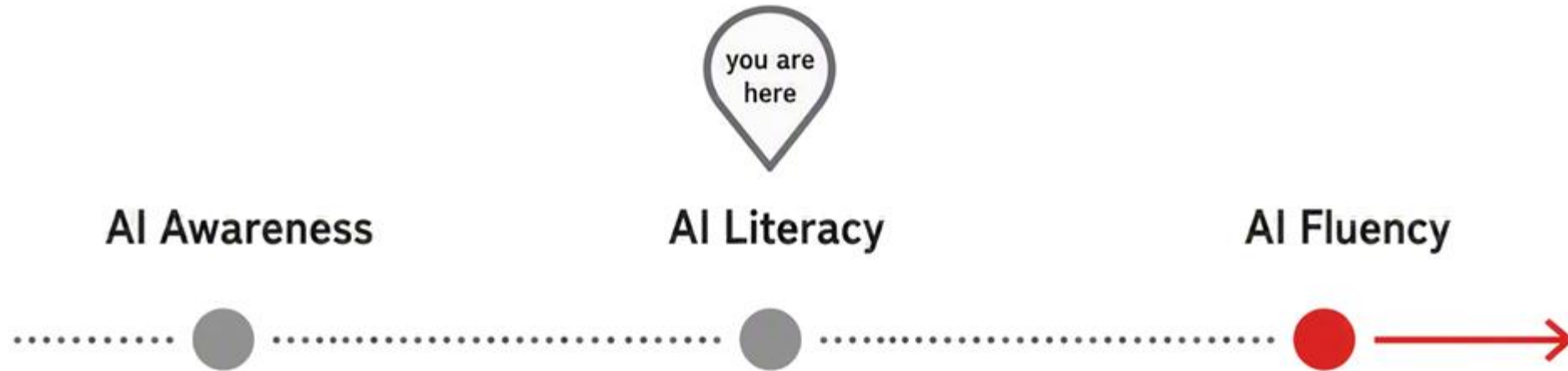
Awareness
• Introduction to GenAI and our Forum • GenAI Tool Demonstrations: How to Access Tools • Introducing the Shiny AI Assistant • Introduction to AI in R • Our internal local AI R Package • AI Governance Guidance: How to be compliant • Introduction to Transformers (How LLMs work) • Demo of hosted fine-tuned LLMs within our group • An overview of AI in Drug Discovery • Statistical Intuition for AI and GenAI • Prompt Engineering: Team Building • 🧩 Hackathon Submission App • Introduction to hosted fine-tuned LLMs within the group • Show & Tell: Fake Dataset Generator from Scratch • Agentic RAG - Prompting our PPQ/PrePPQ documents • AI jargon explained using Santa & his Elves • + image generation

2026

Literacy
• AI Masterclass #1 (LLM Foundations) + Pre-reading • AI Masterclass #2 (RAG) • AI Masterclass #3 (Agentic AI) + Office Hours • M365 Copilot Training
Fluency
• Where can AI improve on Classical Statistical Thinking — or vice versa? • Multi-agentic AI systems • Cognitive Systems in Manufacturing • Specification driven development using AI • Discovery Statistics Workflows: From Report to ShinyApp in 60 seconds



How we are training to AI fluency in practice



- Applied AI Forum
- AI Masterclasses with **external partner** (3-part, tool-agnostic)
- M365 Copilot session with Microsoft inhouse trainers
- Coding assistant trainings in groups of 8
- Office hours for consistent adoption
- **FridAI days** — protected half-day per month for personal AI learning

Minimum Documentation Recommendation

Open the black box by telling me what's in the box

1. Maximum 3 sentences to describe the AI system use
2. Reference all data sources provided to the agents
3. Include a schema

Schema should clearly show

- Number of agents included
- Dataset pre-provided to the agent
- Output clearly marked
- Input clearly marked

if appropriate

- MCP servers used
- Boxes for environments e.g. if specific to one IDE
- Internet access if appropriate

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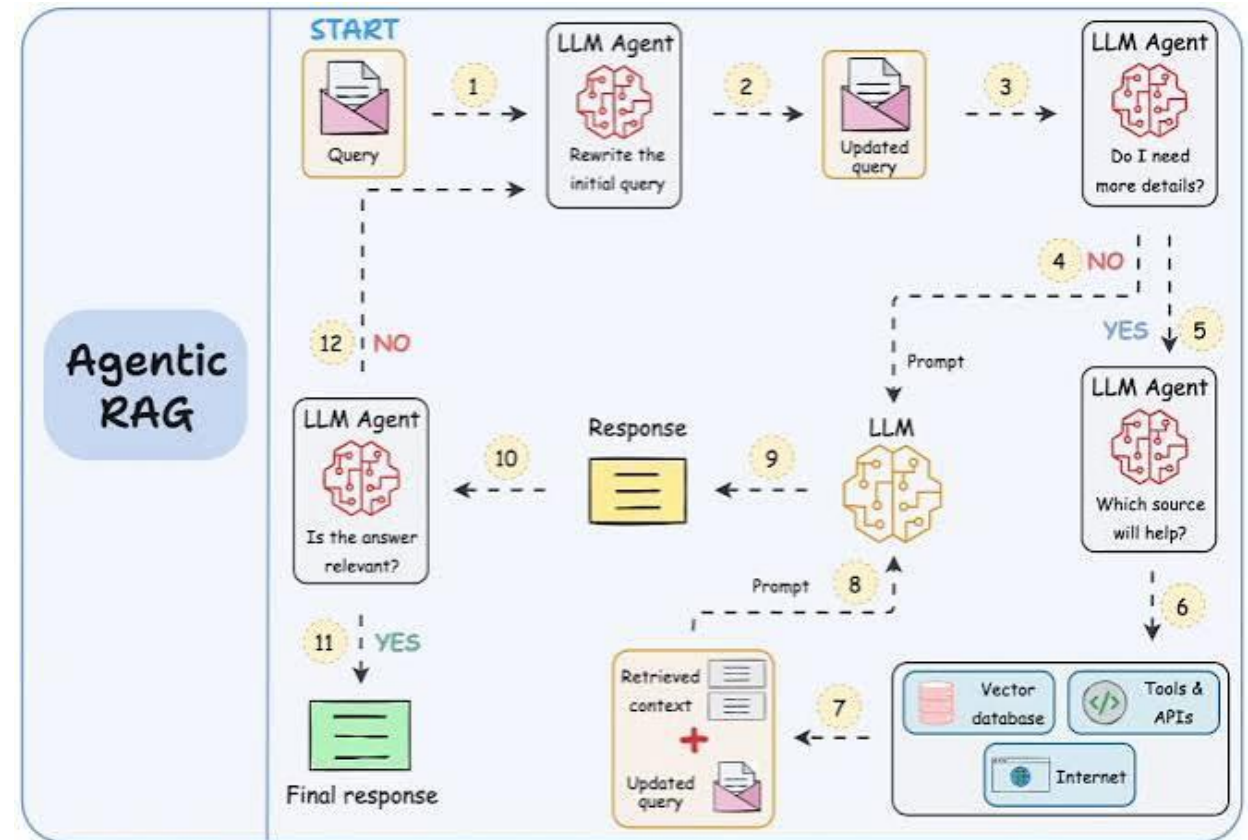
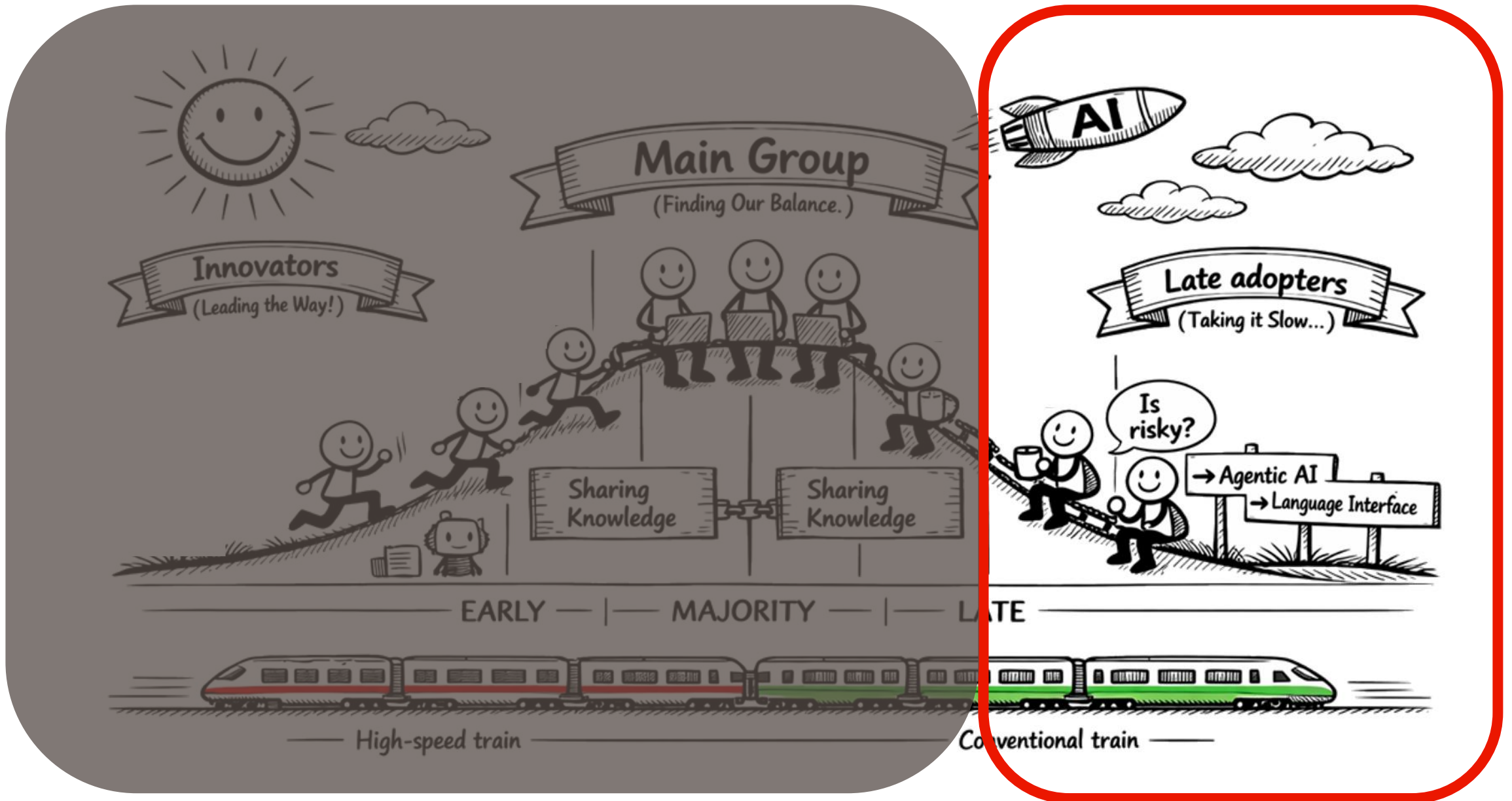


Figure 1. Example of a schema. Not the schema used for our internal recommendations.

(Source: <https://www.domo.com/blog/what-is-agentic-rag-a-practical-guide-for-data-teams>)



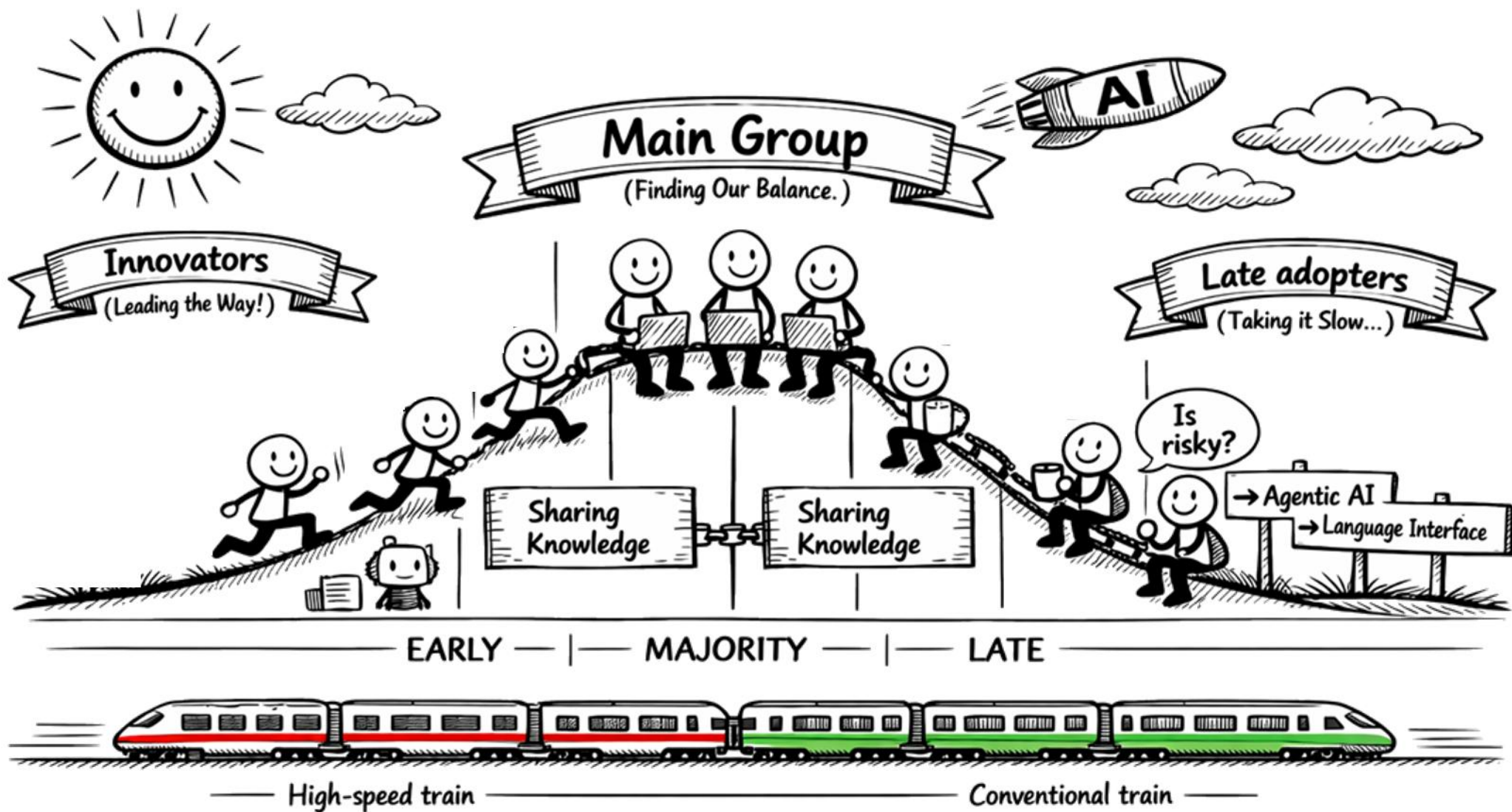
AI initiatives for cautious colleagues

Currently in progress

For the late adopters/sceptics

- Reduce Friction for uptake of new AI => AI FridAIs
- Show the accuracy metrics via an Agent Evaluation layer
- Availability of Local models





The future role of the (nonclinical) statistician

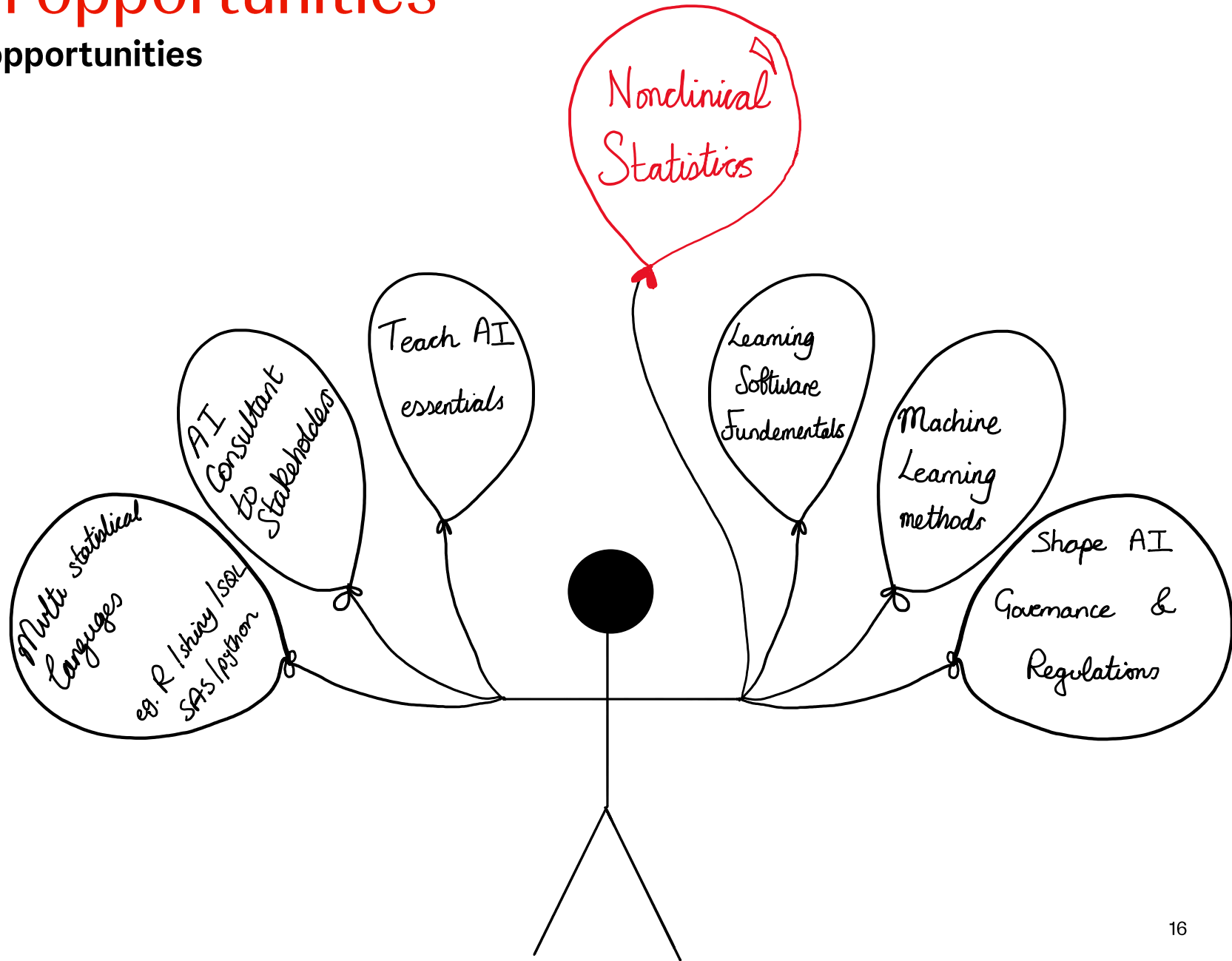


Near future evolution opportunities

Consulting and teaching AI risks and opportunities

Today

-  **git** is now accessible — no excuse not to use version control!
- Multi-language by default: R + Python + *SQL* (*Positron*)
- Statisticians as trusted advisors to scientists on AI use – tutor + safe space



Acknowledgements

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