

um
2026

Bringing Agentic AI to engineering optimization: a new mode**FRONTIER** assistant

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Agenda

Vision

Challenges

Demo

How it works

Conclusions



Vision



Agentic AI

AI is moving from something you use to something that acts on your behalf. That shift has a name. We call it agentic AI.

The model doesn't just answer your question. It reads, it decides, it calls tools, it produces structured output, and it hands you back a finished result



Opportunity

Engineering optimization sits exactly on intersection where agentic AI can be useful:

There's a clear goal

High learning curve on tools

Scenario



Workflow scenario

If you've ever built an optimization study, you know the path to create a new project

You drag a Start node.

You add an application node

You wire it up.

You go look at your model, read off the variable names, copy them back.

Plan scenario

Then your input and output domain

Then your objectives

Then your constraints

Then you pick a DOE

Then an algorithm

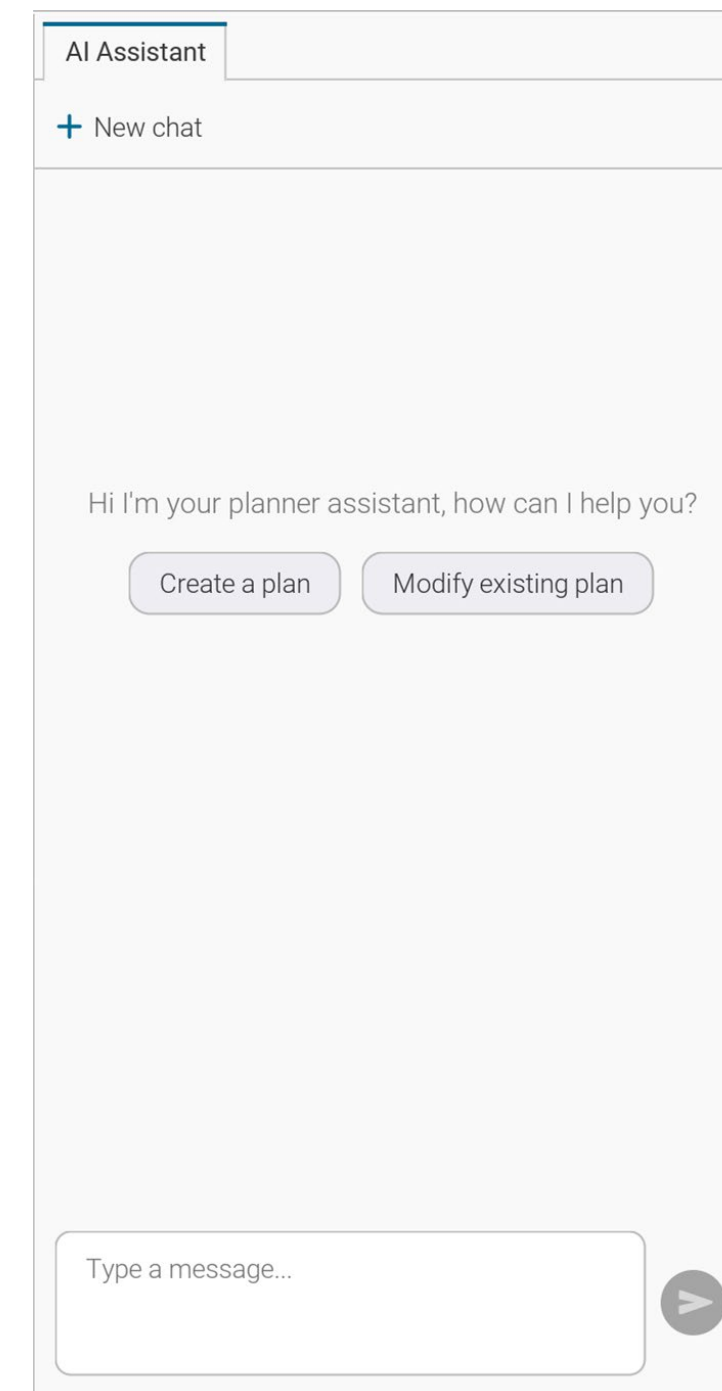
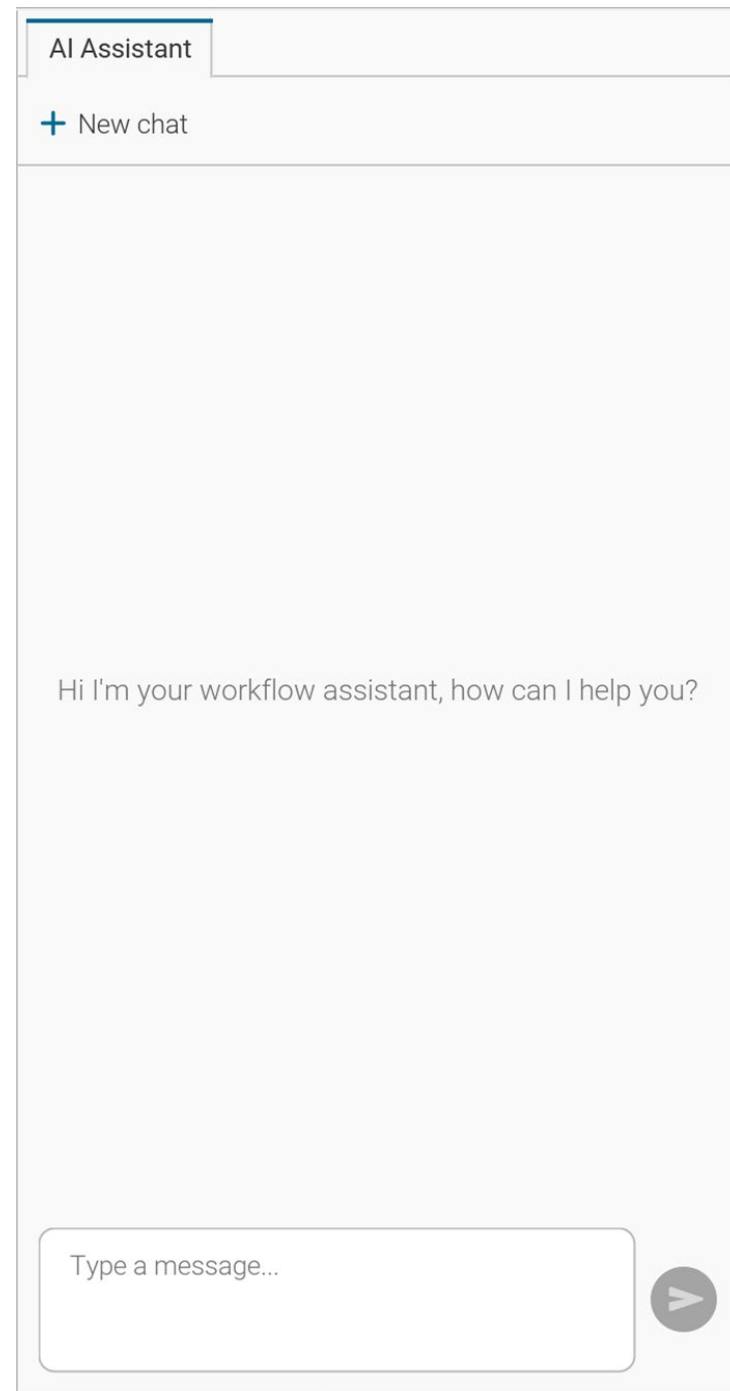
...and only then do you press Run.

Current scenario

Every step is a decision

Mostly made by the same person,
guided to the problem they want to solve

Where agents come to help



Demo













How It Works

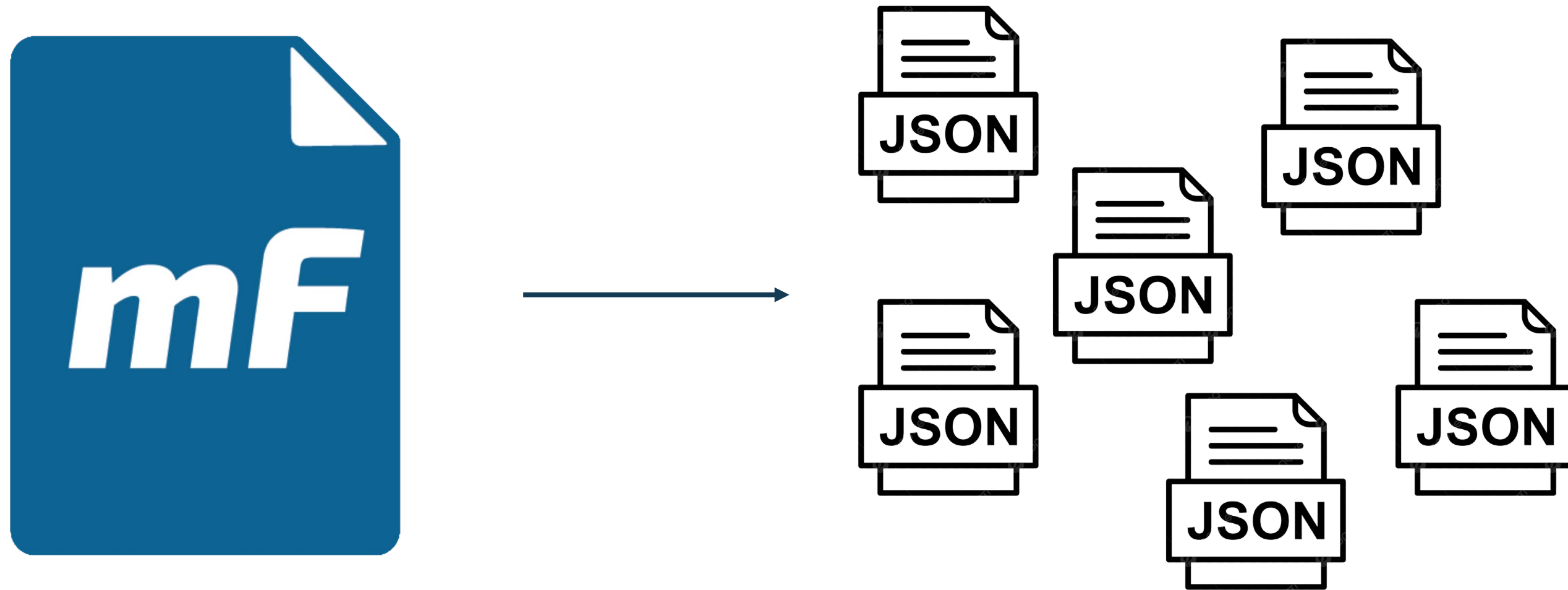


How do we know what it produces is correct?

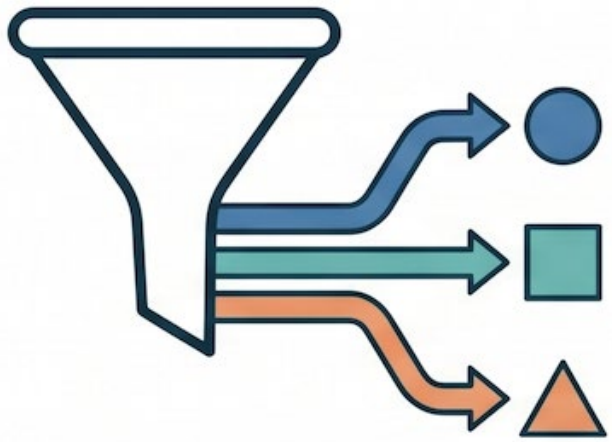
Asking an LLM to generate an optimization plan from a free-form prompt is exactly the kind of task where you'd **expect hallucinations**. Invented variables. Malformed algorithms. Half-baked constraints.

Structured data as foundations

Agentic AI is only as good as the data it can read and write. So the very first investment we made wasn't in models, or prompts, or agents. It was in the data.



Agentic pipeline



Classification



Module
identification

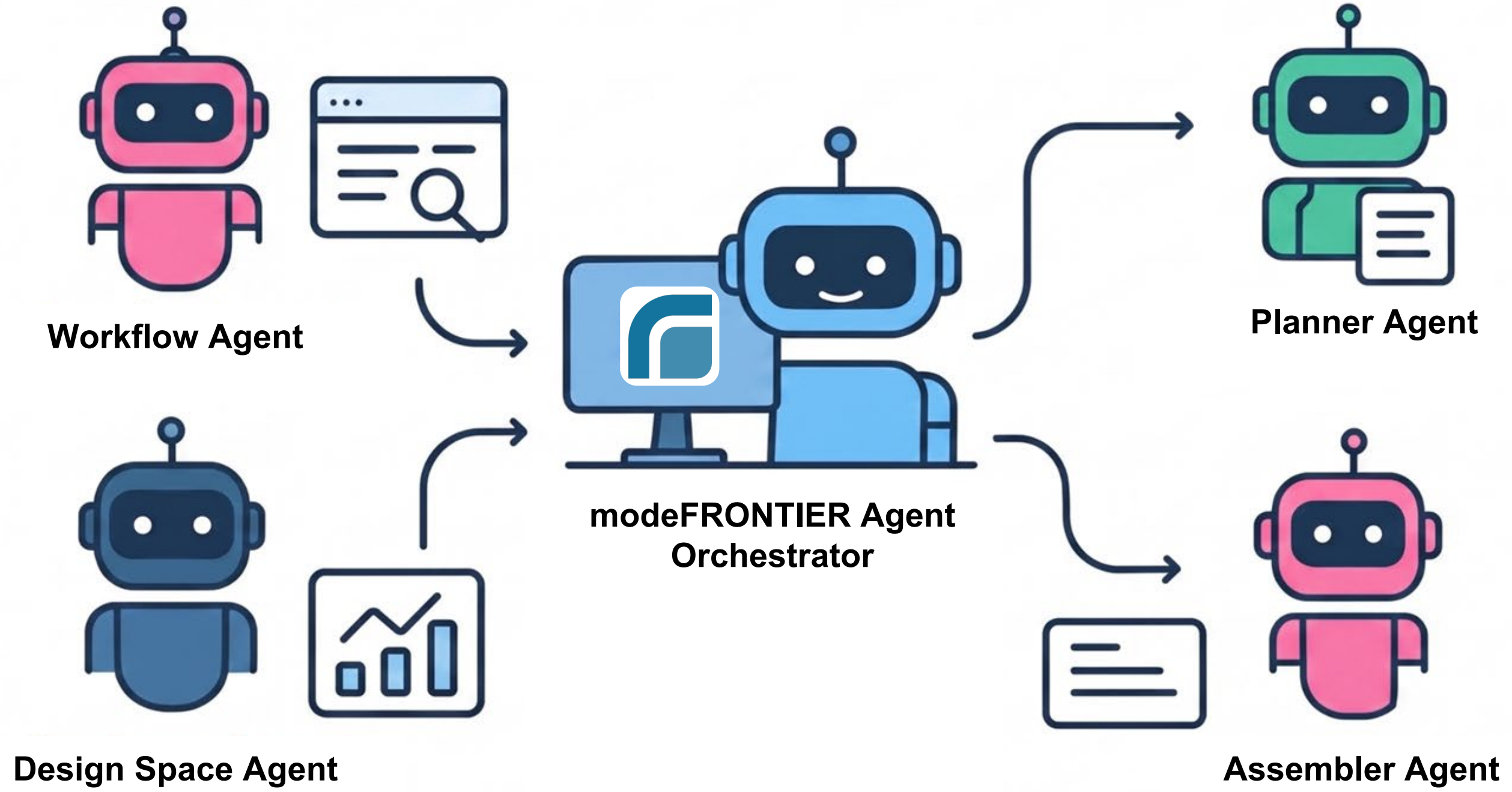


Schema grounded
generation



Assembly and
description

Multi Agent



Multi vendor



Conclusions



Risks



Stakes are
higher

Engineering optimization has been slower to feel the AI transition than other fields.

You're making decisions that affect physical products, real components, real budgets.

Risks

An engineer is not going to ship a design because a chatbot said it was a good idea. They need to understand it, verify it, and own it.

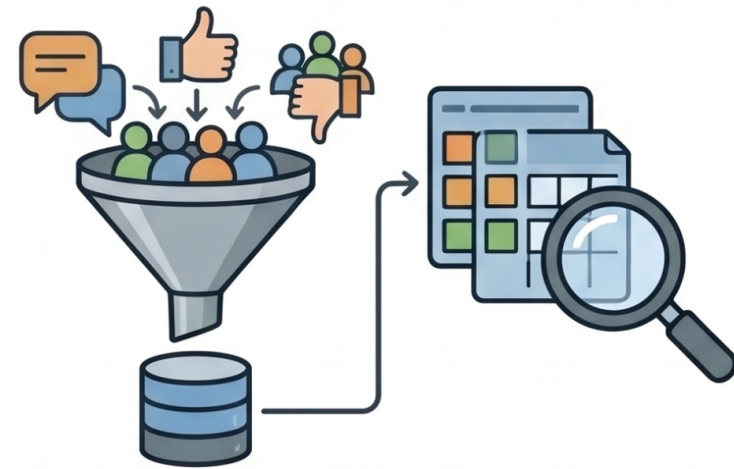


The field demands trust

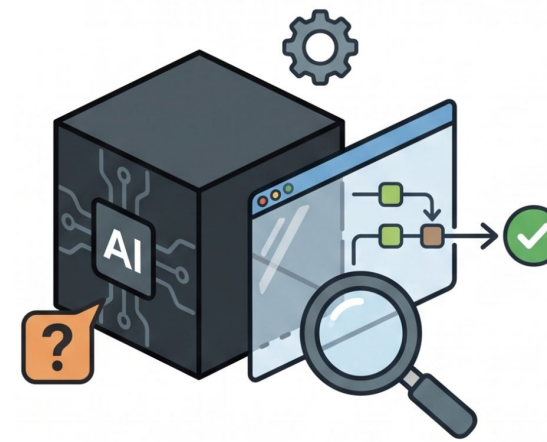
Shift is possible



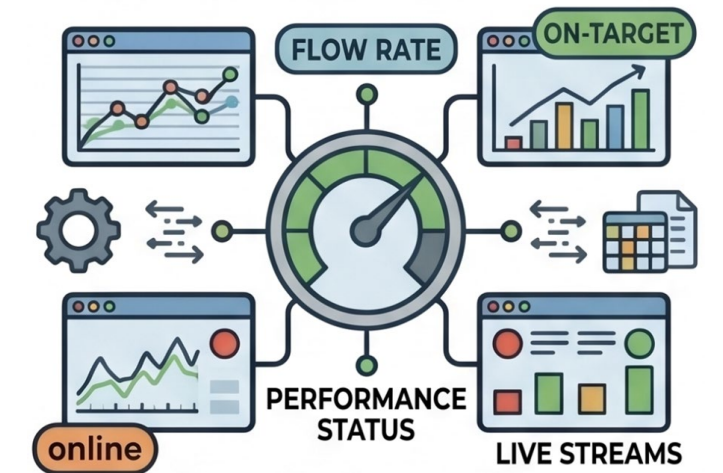
Clear objectives



Data quality and preparation



Explainability



Monitoring and evaluation

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Thank you

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