The Best Thing Your AI Can Say Is "I Don't Know."

Standard models are mathematically forced to guess. 99% confidence, even on data completely outside their training.

SWIPE →

Engineering the Reject Option

99%

Confidence on Data It's Never Seen

A softmax output layer forces a prediction across a fixed set of classes. A fallen tree gets called "bus: 85%" because it shares textural features with a bus chassis.

Standard deep learning architecture

8%

False Positive Rate, Real Excavation Costs

A leak-detection model at 92% accuracy still sends crews to dig up dry roads 8% of the time, until an abstention layer routes uncertain alerts to a human analyst instead.

Water network resilience, acoustic sensors

1%

Conformal prediction outputs a set of probable classes with a user-defined error rate like 1%, and abstains outright when the set is empty or contradictory.

Conformal prediction, industrial applications

The most valuable output an AI system can generate is not a prediction, but a refusal to predict.

Terence Kok
Enterprise AI Strategist

Aleatoric vs. Epistemic Uncertainty

ALEATORIC	EPISTEMIC
Sensor noise, e.g. a sandstorm	Lack of training data
More data can't fix it	Solvable with better data
Learn to operate within the margin	Model must first spot its own ignorance

No Model Is Allowed to Leave a Question Blank.

It's a multiple-choice exam where you must bubble in an answer even for a question in a language you don't speak. Pick "C" because it looks vaguely familiar, and the grading machine assumes you're confident. Standard AI works the same way: mathematically forced to choose, often masquerading a wild guess as a confident fact.

Route Uncertainty to a Human, Not a Guess.

High-confidence leak → auto-dispatch repair crew | High-confidence normal → no action | Uncertain → route to human analyst

Full technical breakdown and the leadership checklist:
terencekok.com/blog/ai-without-answers-building-systems-know-when-dont

Don't just ask for accuracy. Ask for the rejection rate.

When AI admits "I don't know," it isn't failing. It's demonstrating the highest level of reliability.

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