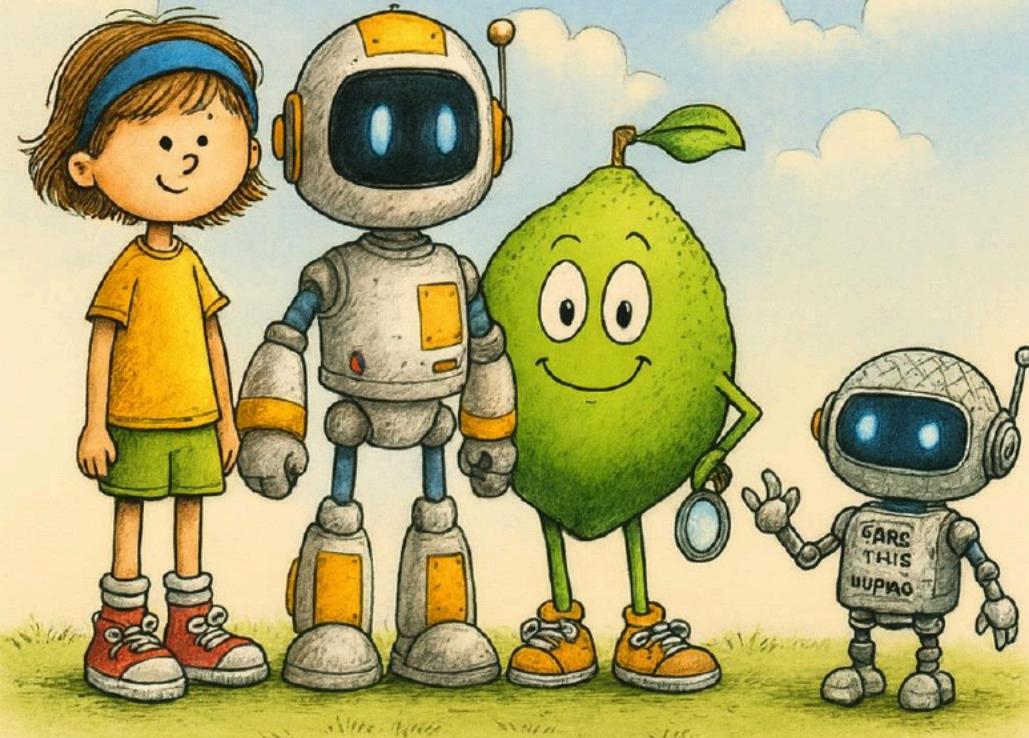
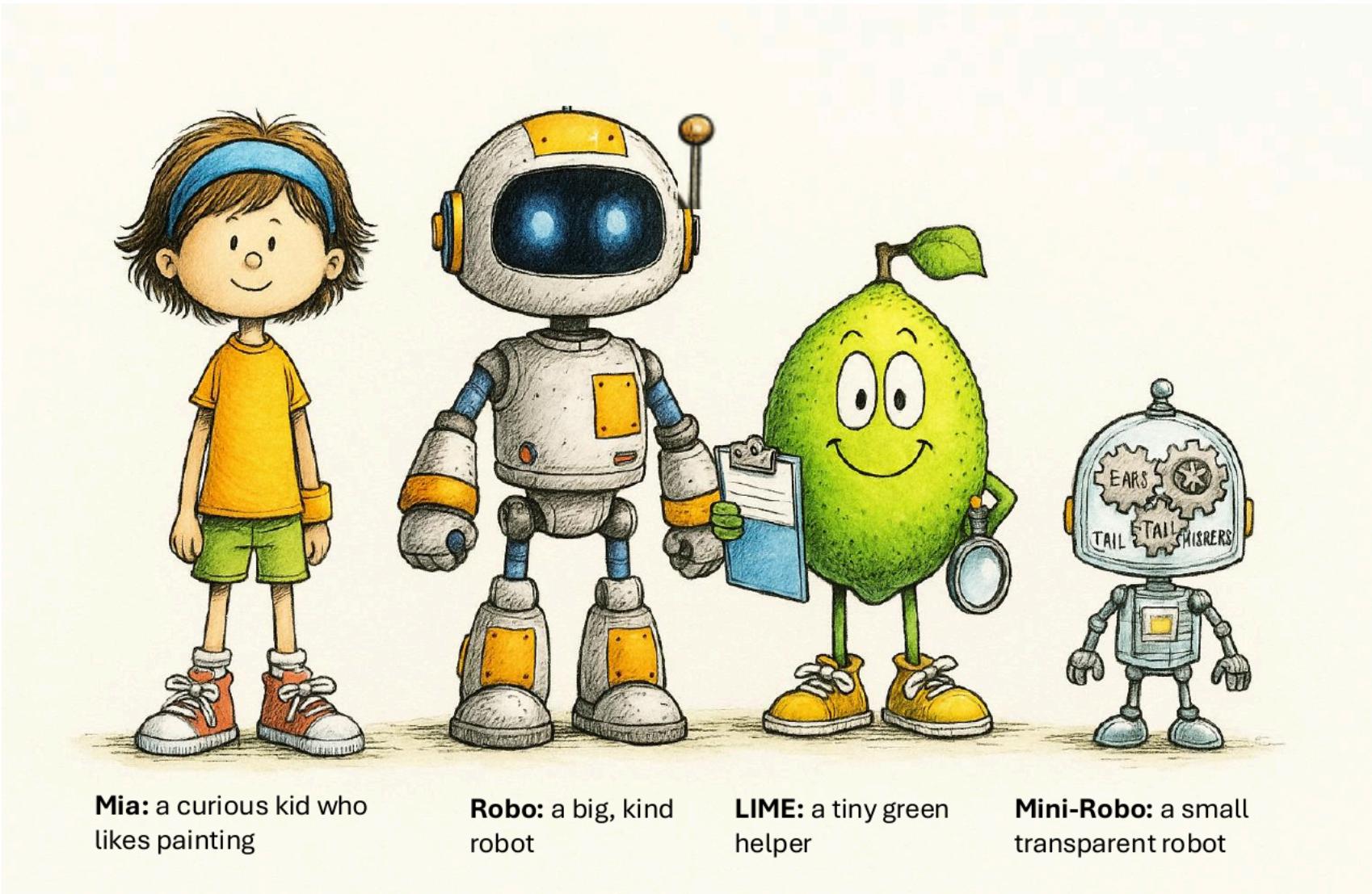


EXPLAINABLE AI WITH LIME

By Jennifer Li



Cast



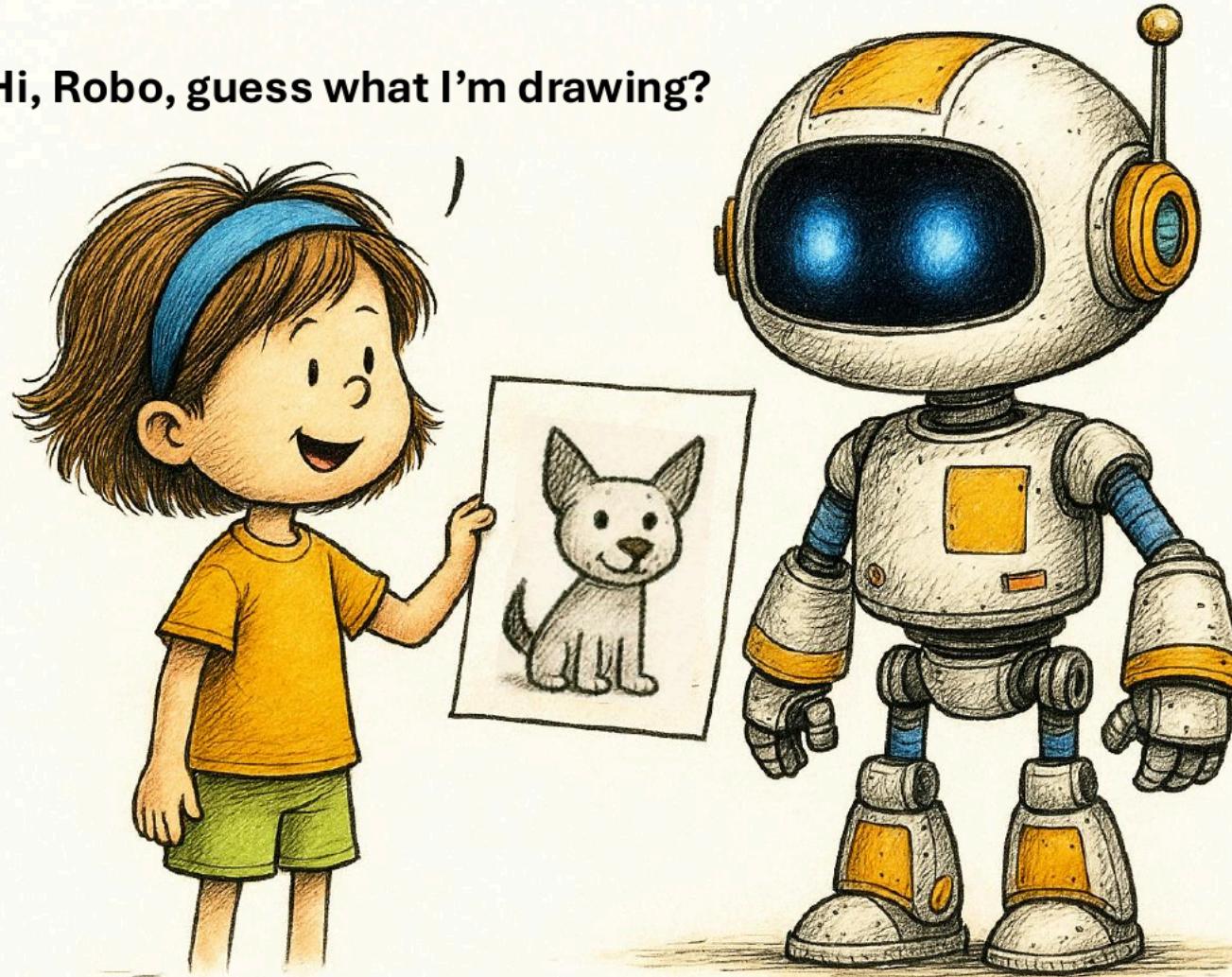
Mia: a curious kid who likes painting

Robo: a big, kind robot

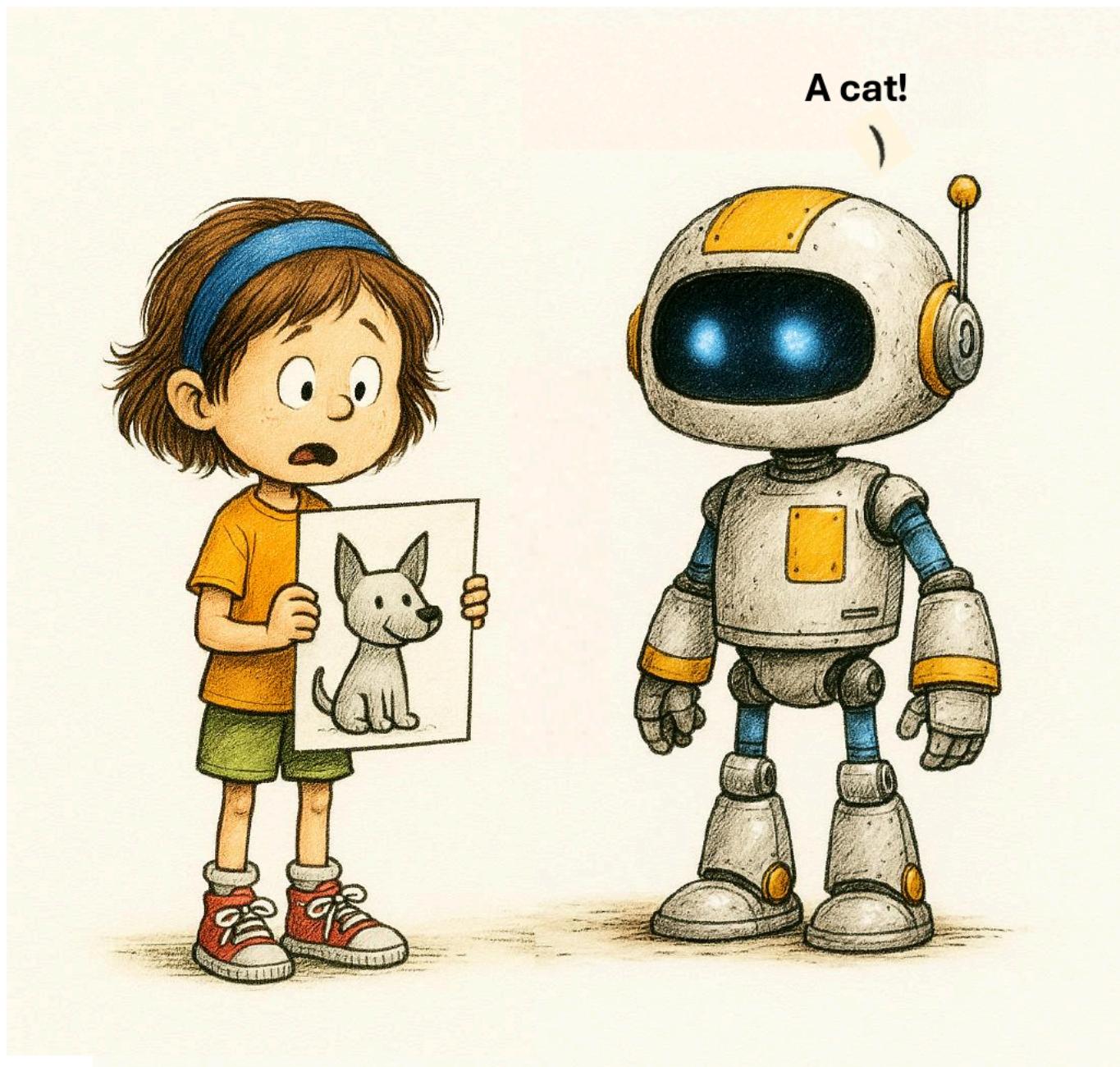
LIME: a tiny green helper

Mini-Robo: a small transparent robot

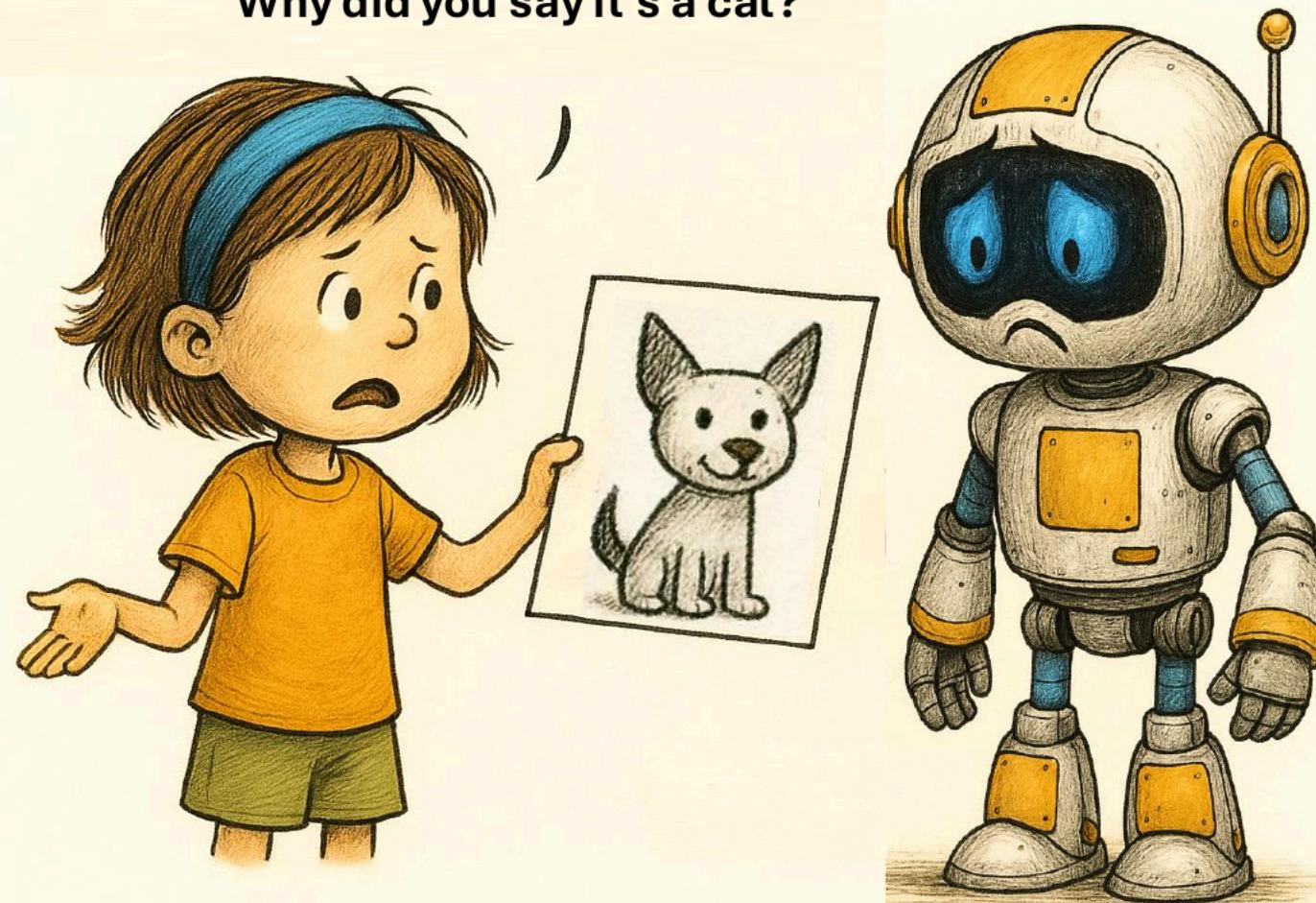
Hi, Robo, guess what I'm drawing?



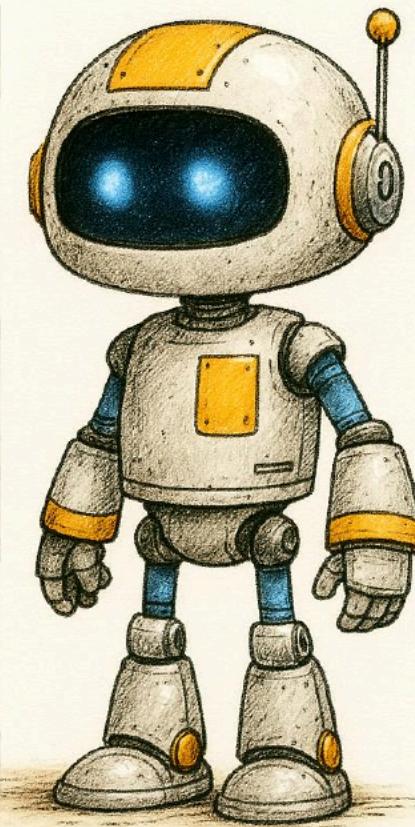
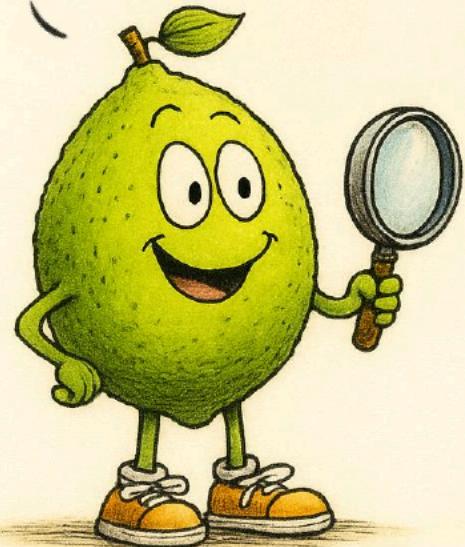
A cat!

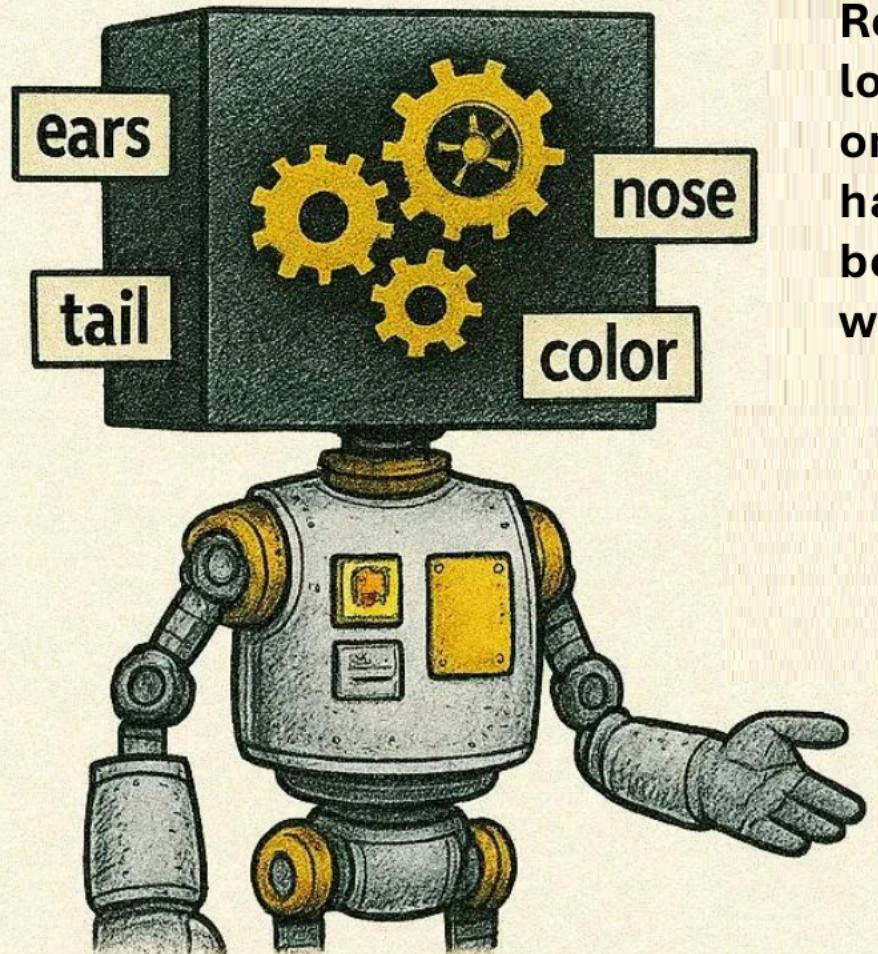


**But I drew a dog!
Why did you say it's a cat?**

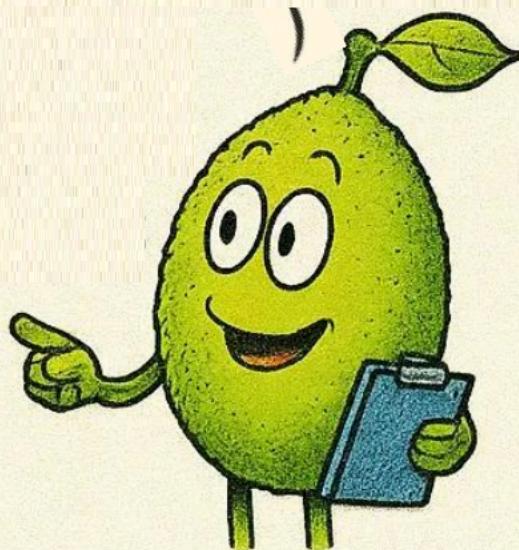


**Hi! I'm LIME, your helper!
I can help you find out why
Robo made this guess!**

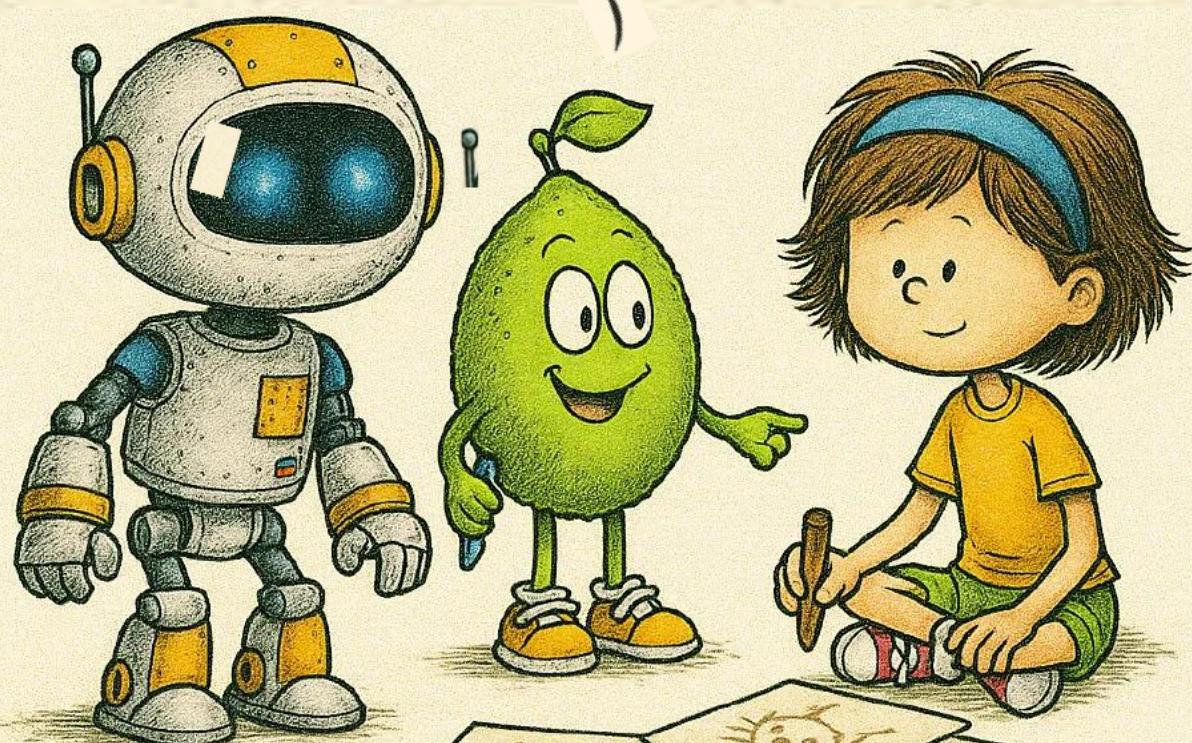




Robo has a huge brain that looks at many clues all at once. But its thinking happens inside a big black box, so we can't see how or why it makes its decisions.



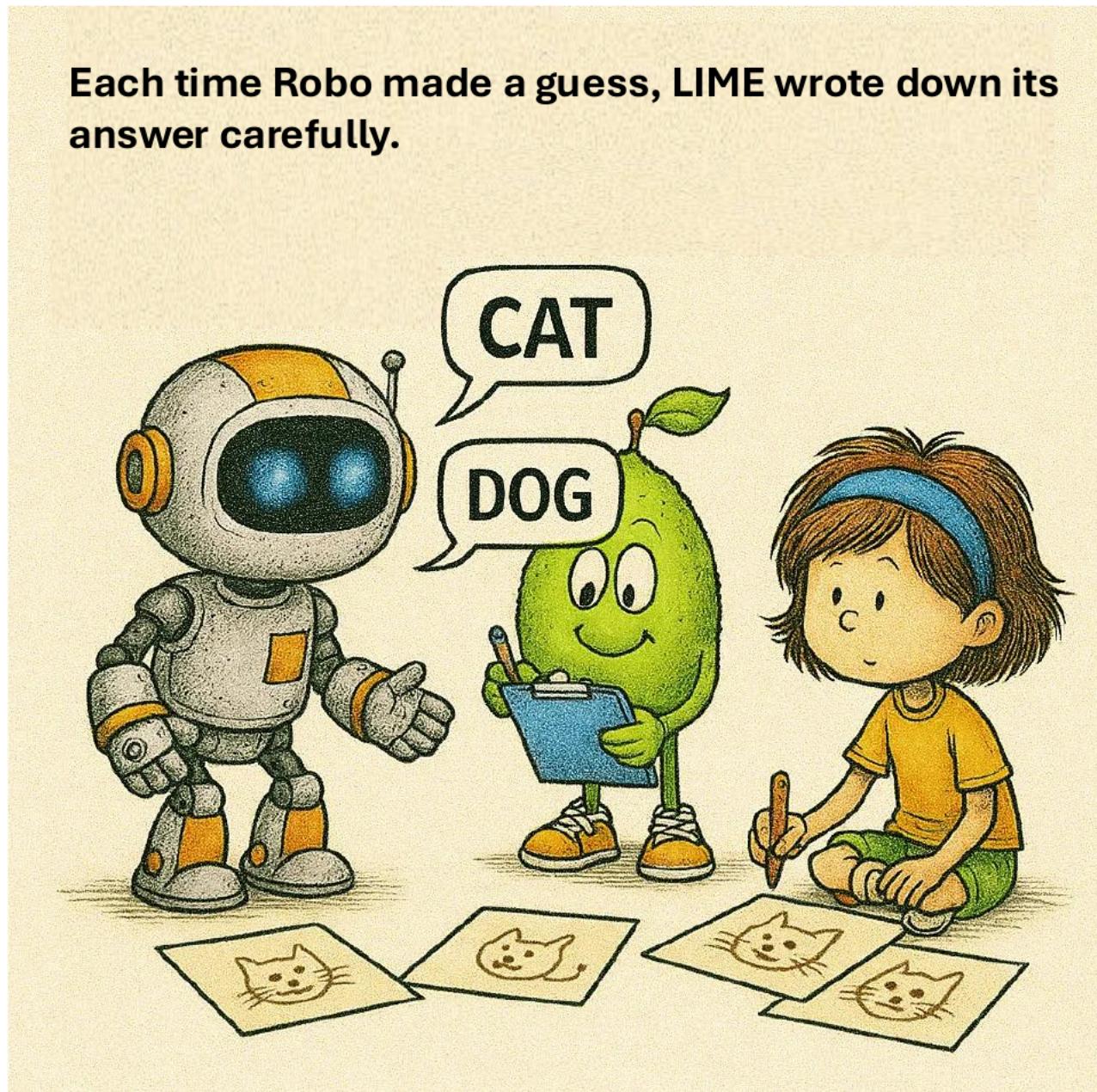
**Let's test Robo! If we change
the painting just a little bit, see
what Robo will answer!**



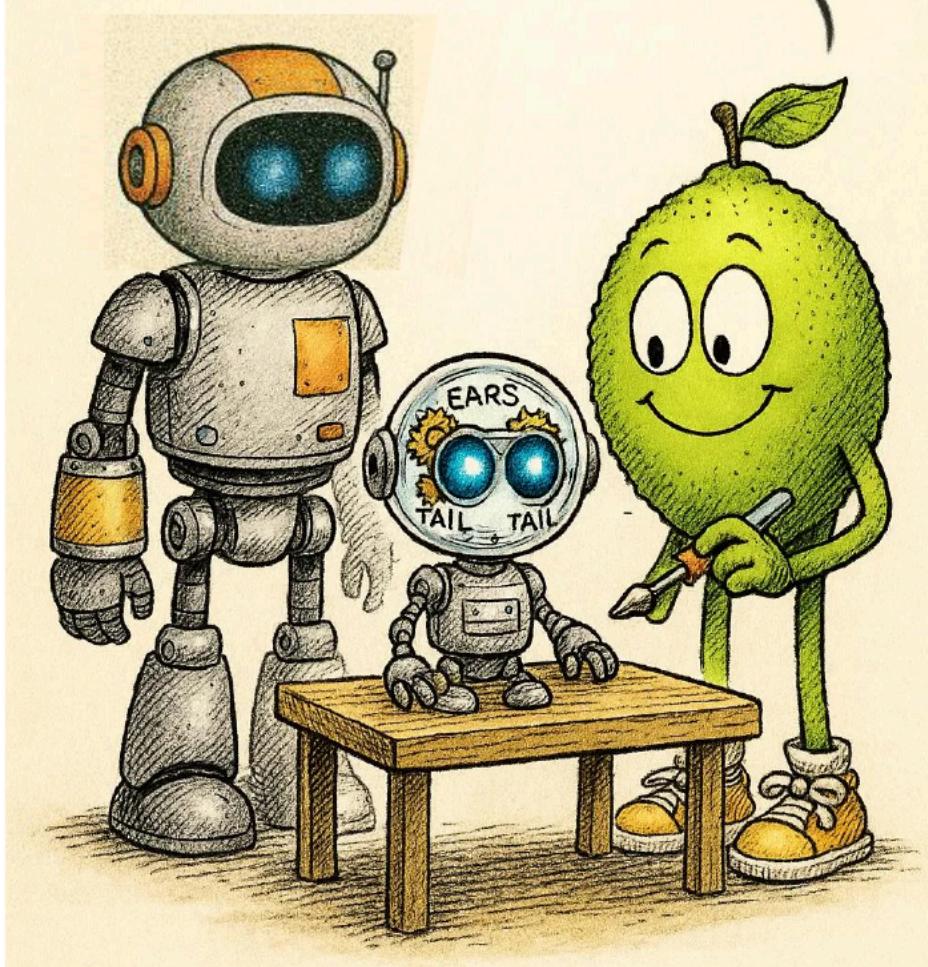
**one with
shorter ears**

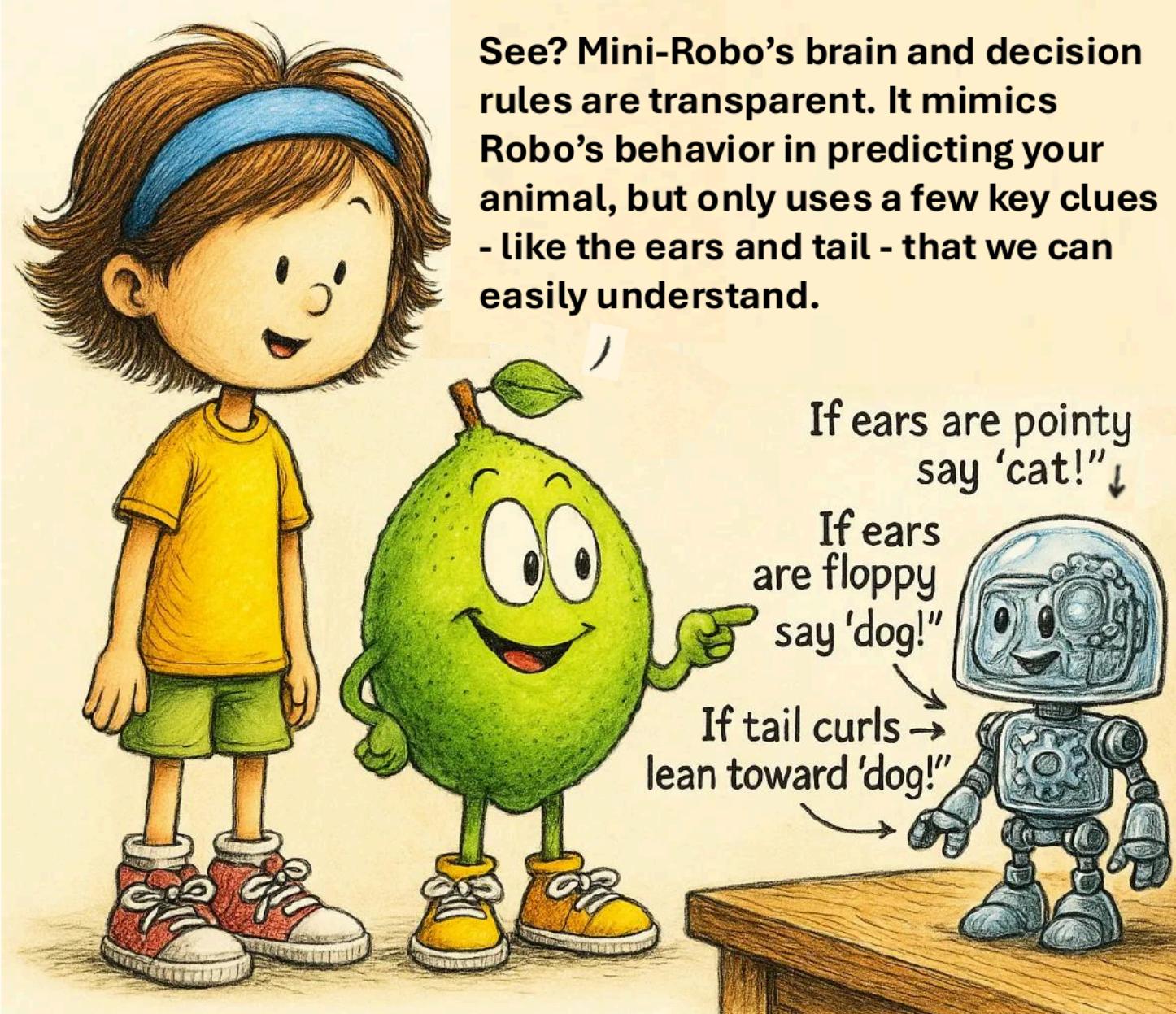
one with rounder eyes

Each time Robo made a guess, LIME wrote down its answer carefully.



I've collected enough answers from Robo. Now, I'll build a Mini-Robo, a little helper that acts like the big Robo, but clearly shows how it makes its decisions!





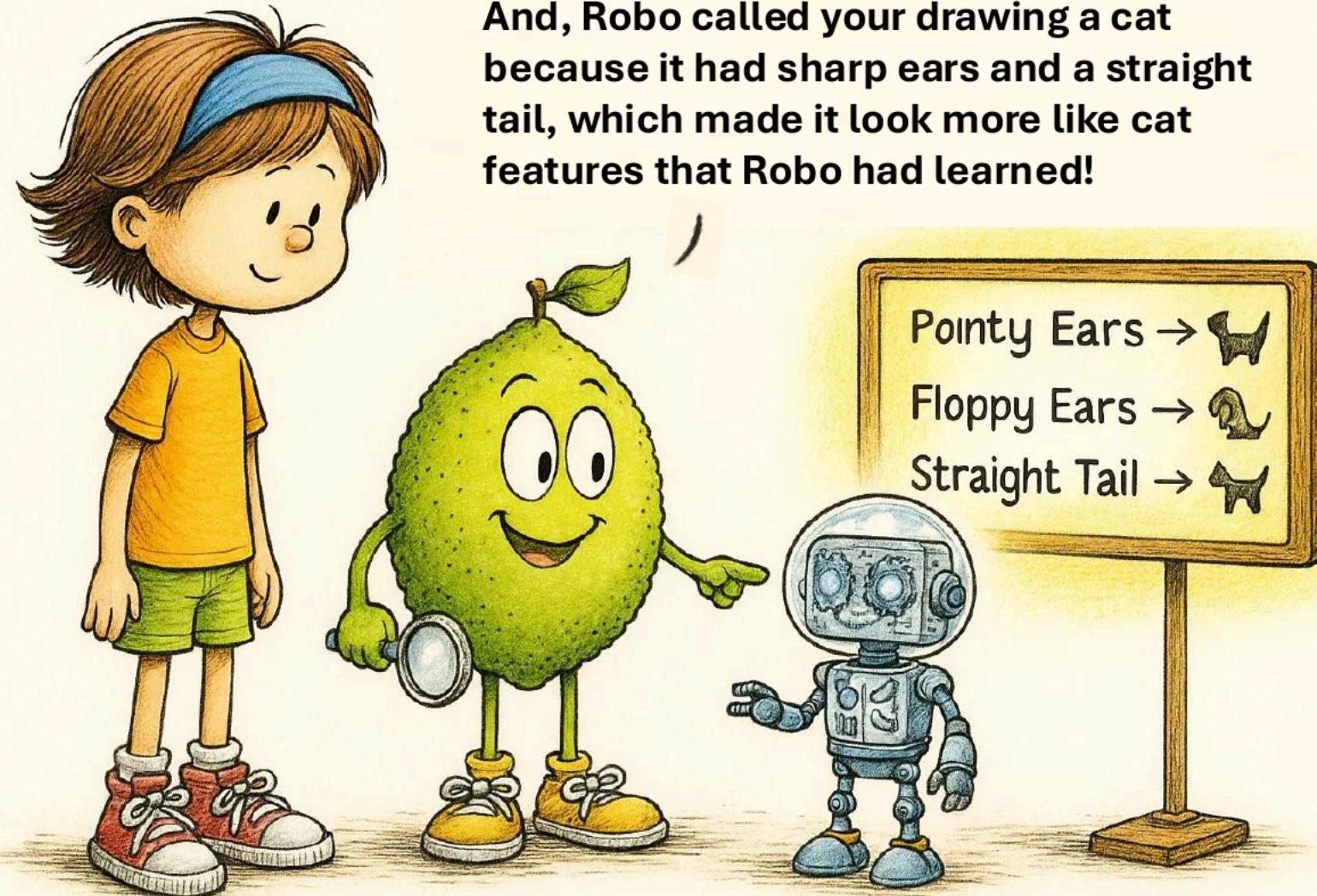
See? Mini-Robo's brain and decision rules are transparent. It mimics Robo's behavior in predicting your animal, but only uses a few key clues - like the ears and tail - that we can easily understand.

If ears are pointy
say 'cat!' ↓

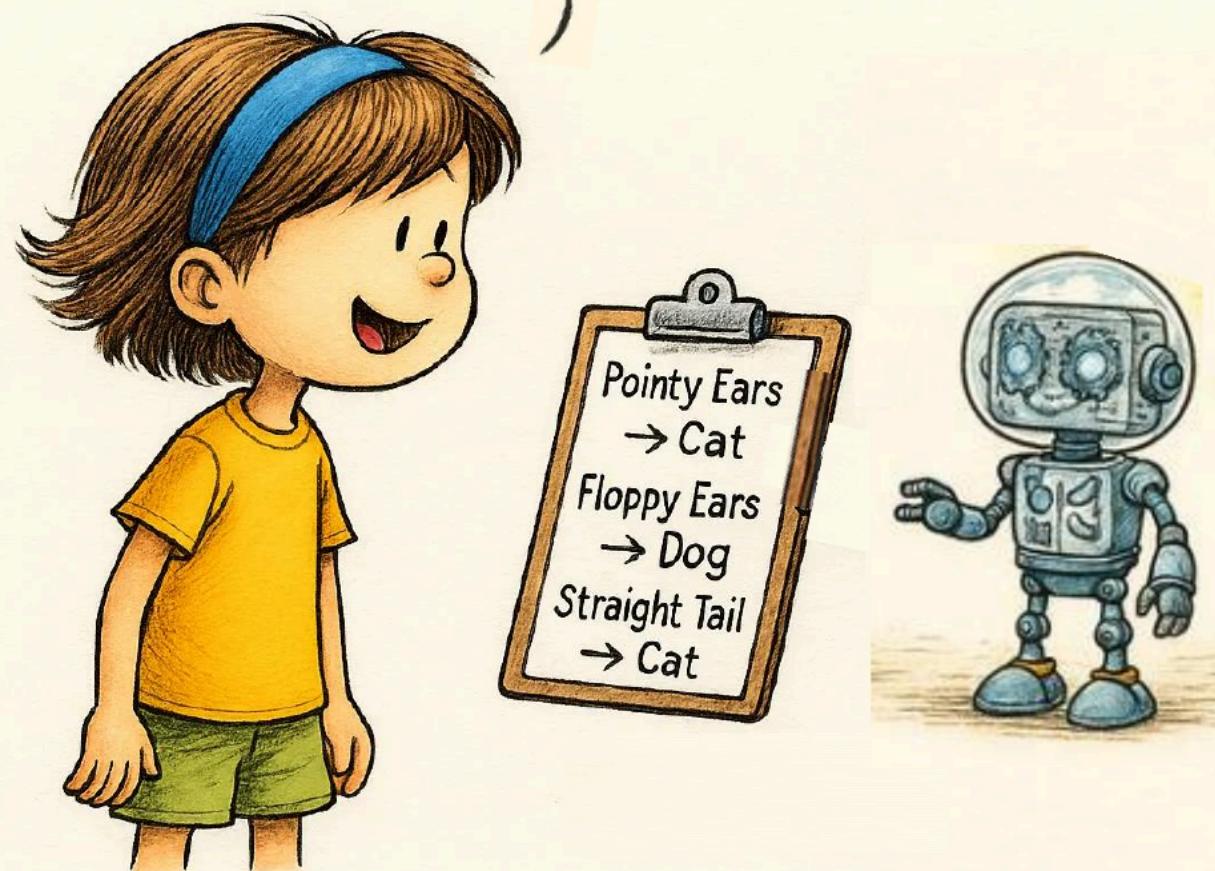
If ears
are floppy
say 'dog!'

If tail curls →
lean toward 'dog!'

**And, Robo called your drawing a cat
because it had sharp ears and a straight
tail, which made it look more like cat
features that Robo had learned!**

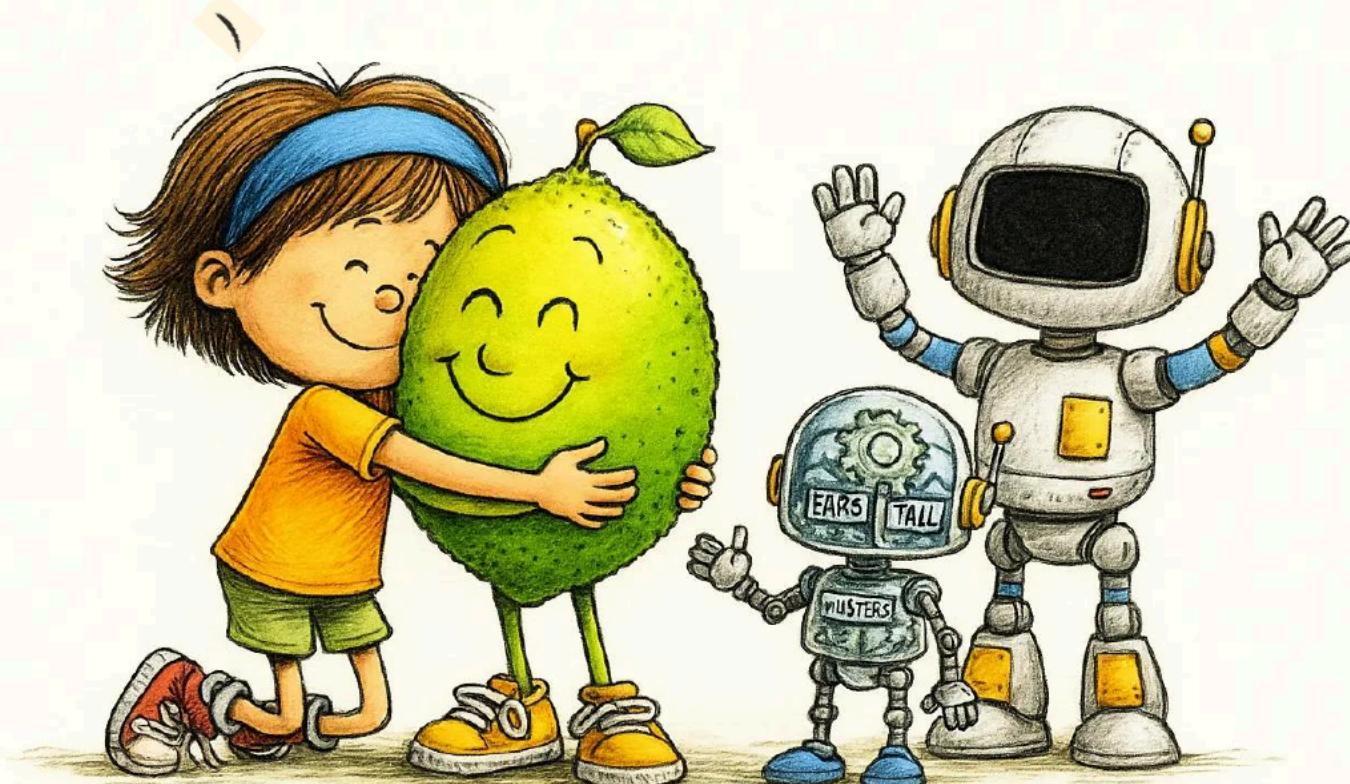


**Now I get it! Robo's big brain hides its thoughts,
but Mini-Robo makes them see-through by
showing the key clues that shaped Robo's choice!**

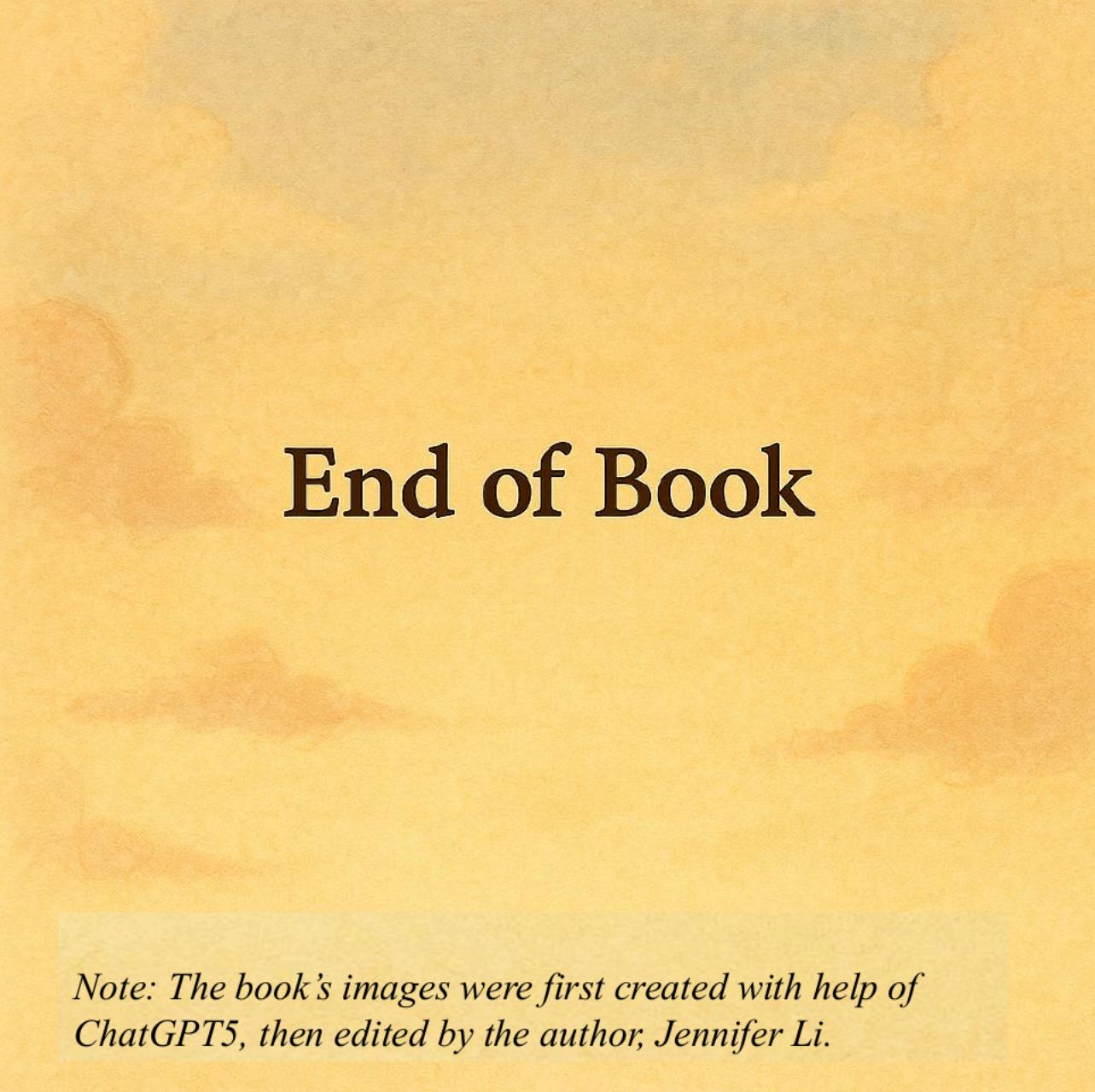




Thank you so much LIME! You are very helpful!



**I'm glad to help! It's my job to help you understand
why machines make their predictions!**



End of Book

Note: The book's images were first created with help of ChatGPT5, then edited by the author, Jennifer Li.