What is needed for AI to become AGI?

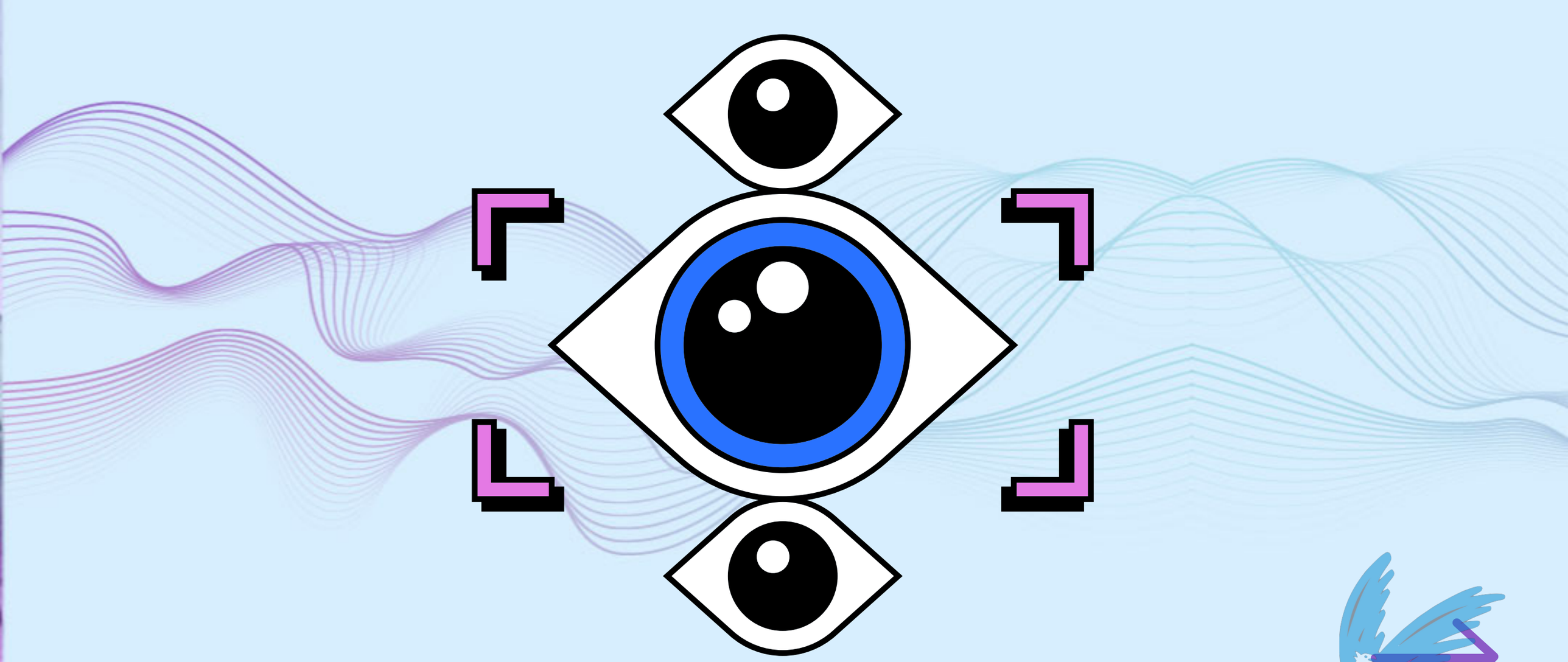
There are 8 capabilities that AI needs to master before achieving artificial general intelligence, a theoretical system with capabilities that rival those of a human.

McKinsey & Company | QuantumBlack AI by McKinsey

1

Visual perception

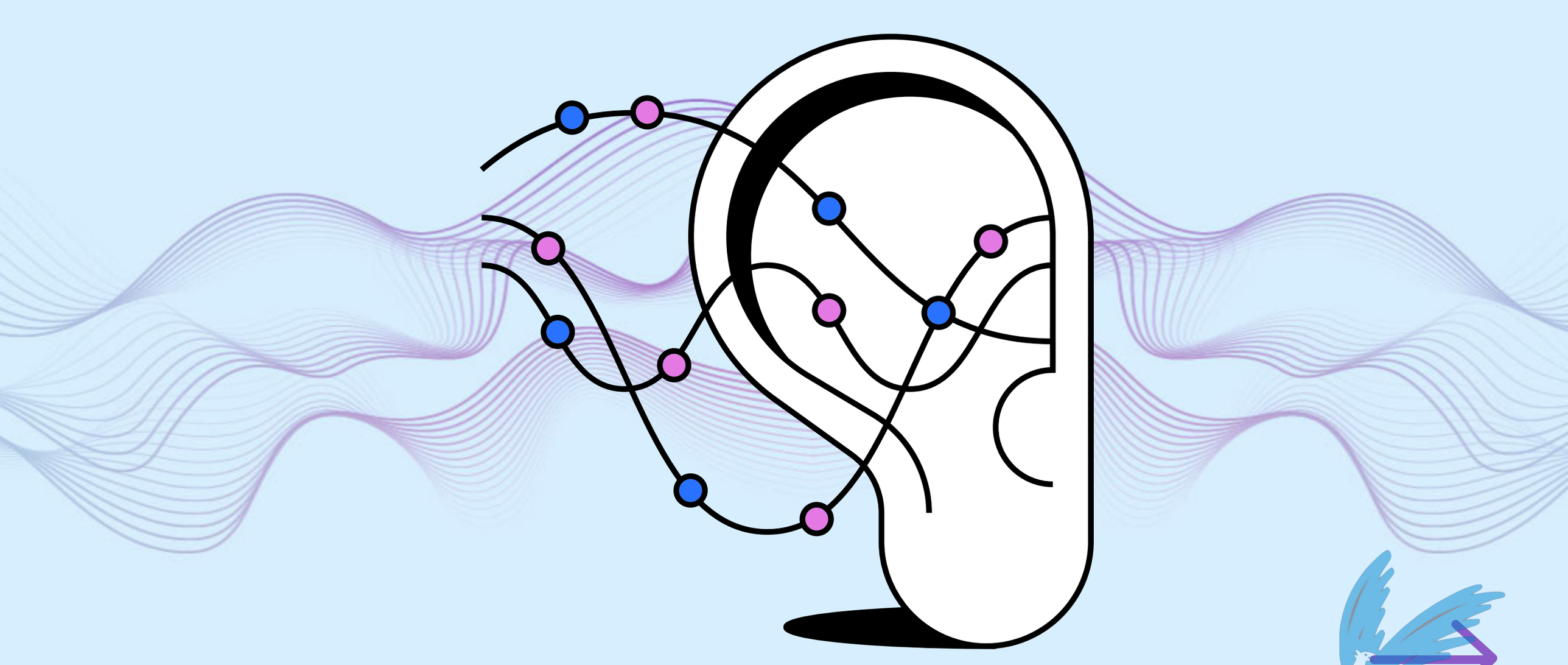
AI systems are a long way from achieving human-like sensory perception—autonomous cars have been fooled into thinking a red stop sign is something else.



2

Audio perception

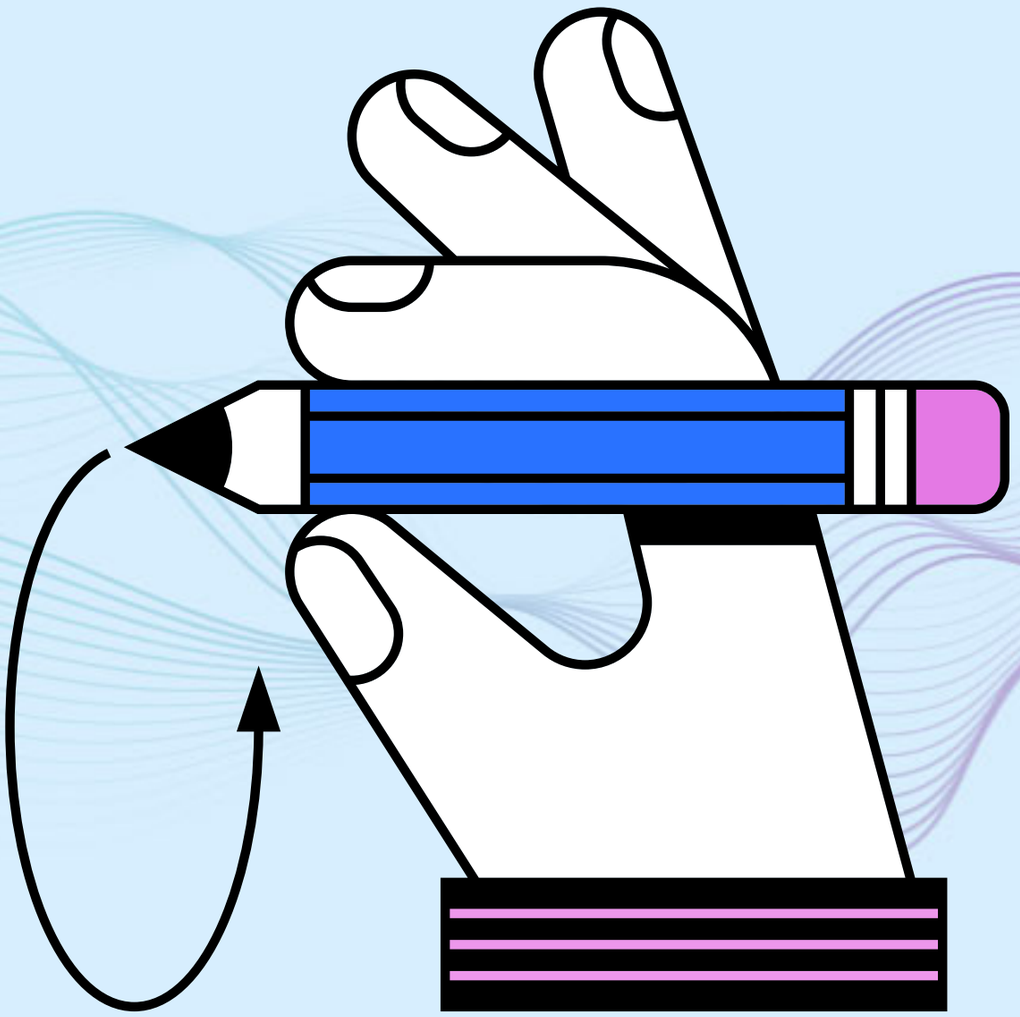
Humans use sound to determine the spatial characteristics of an environment with little to no effort—but AI currently has a more limited ability to interpret noise.



3

Fine motor skills

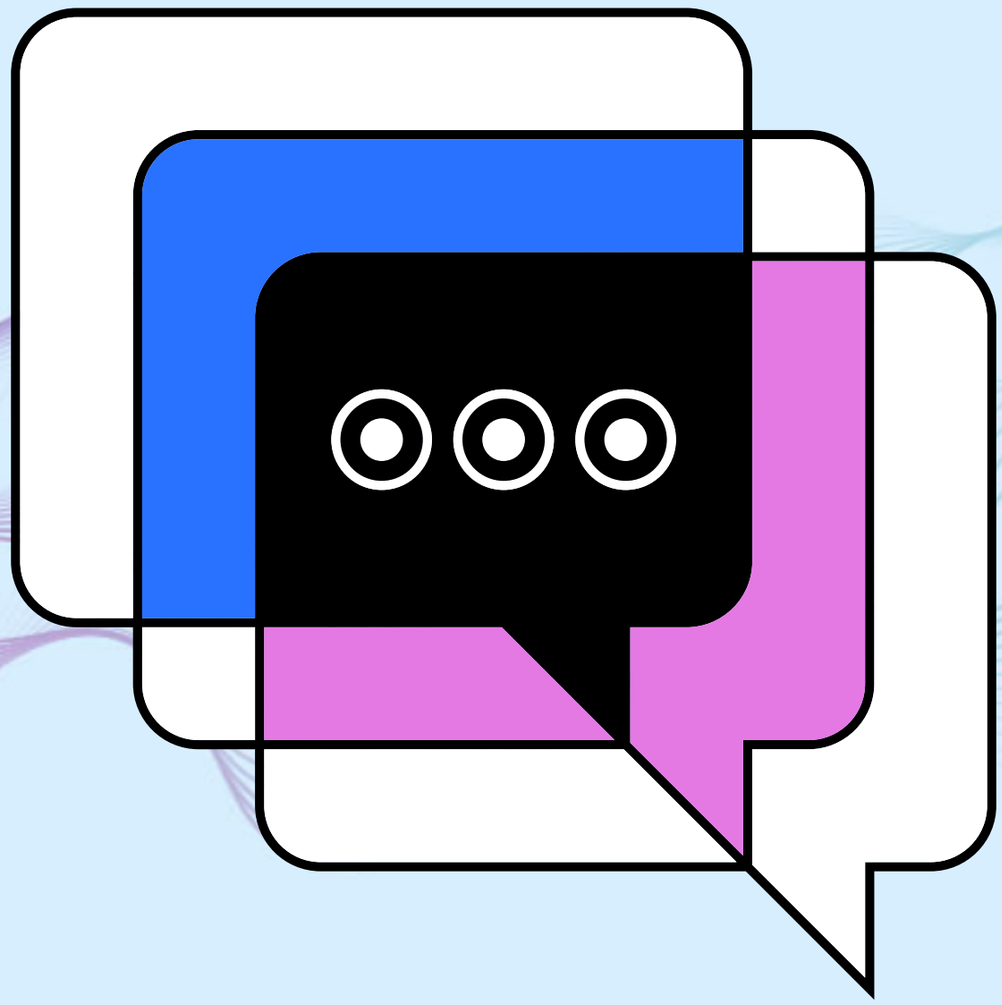
AI-powered robots have yet to achieve the kind of fine motor skills that would inspire us to trust them to independently perform surgery on our loved ones.



4

Natural language processing

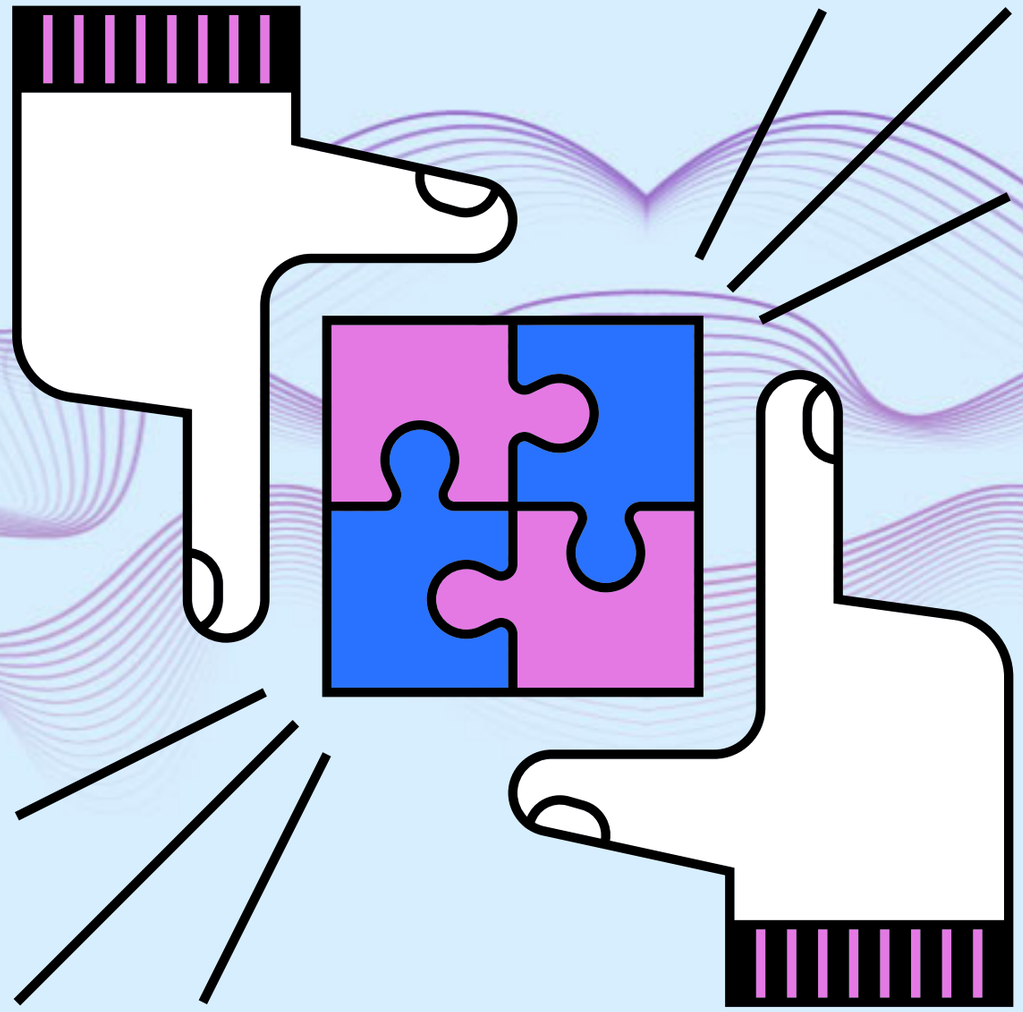
To rival human-level cognition, AGI would need to consume information with full comprehension, and operate with common sense equivalent to that of a person.



5

Problem-solving

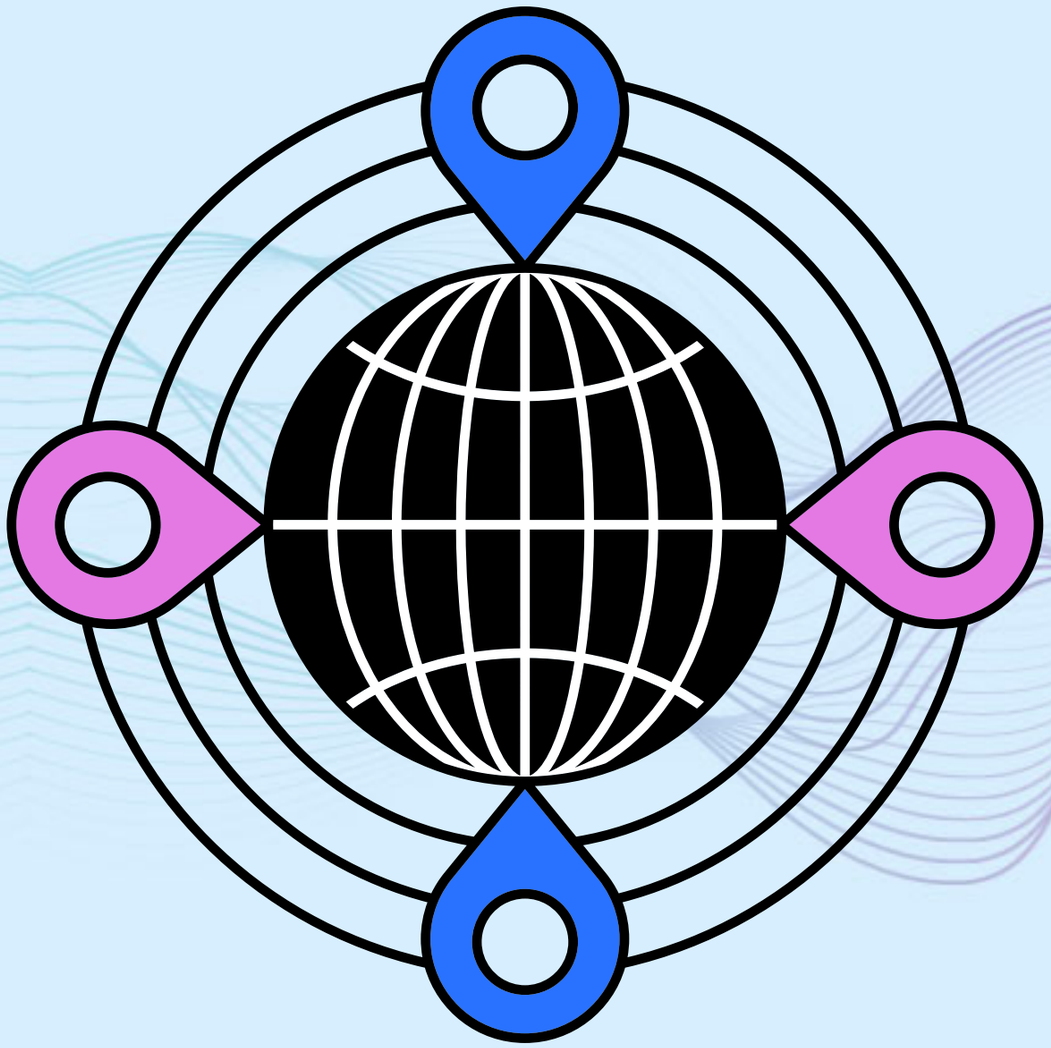
AGI needs to be able to diagnose and address problems—such as recognizing and replacing a faulty lightbulb—and be able to learn from, and adapt to, its environment and experiences.



6

Navigation

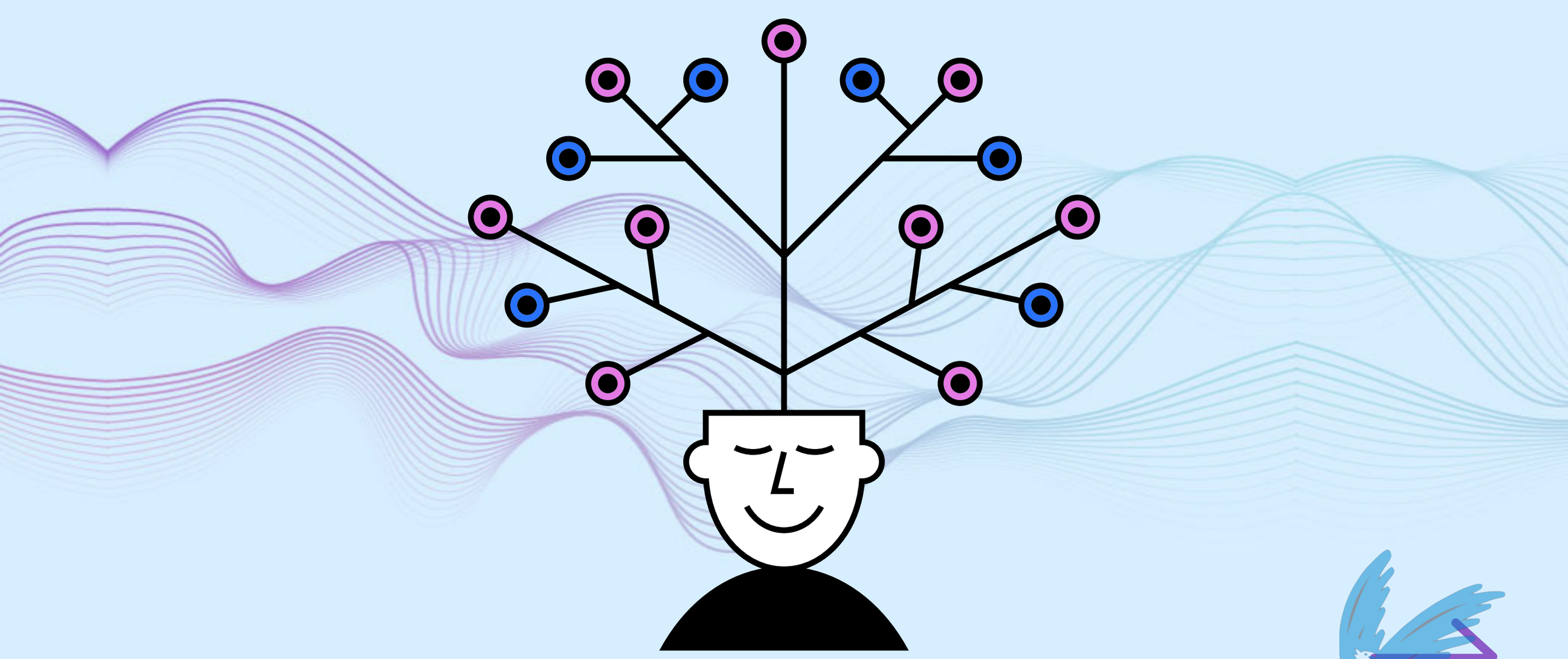
GPS has made good progress—but years of work are needed to create systems that can navigate autonomously with no human priming.



7

Creativity

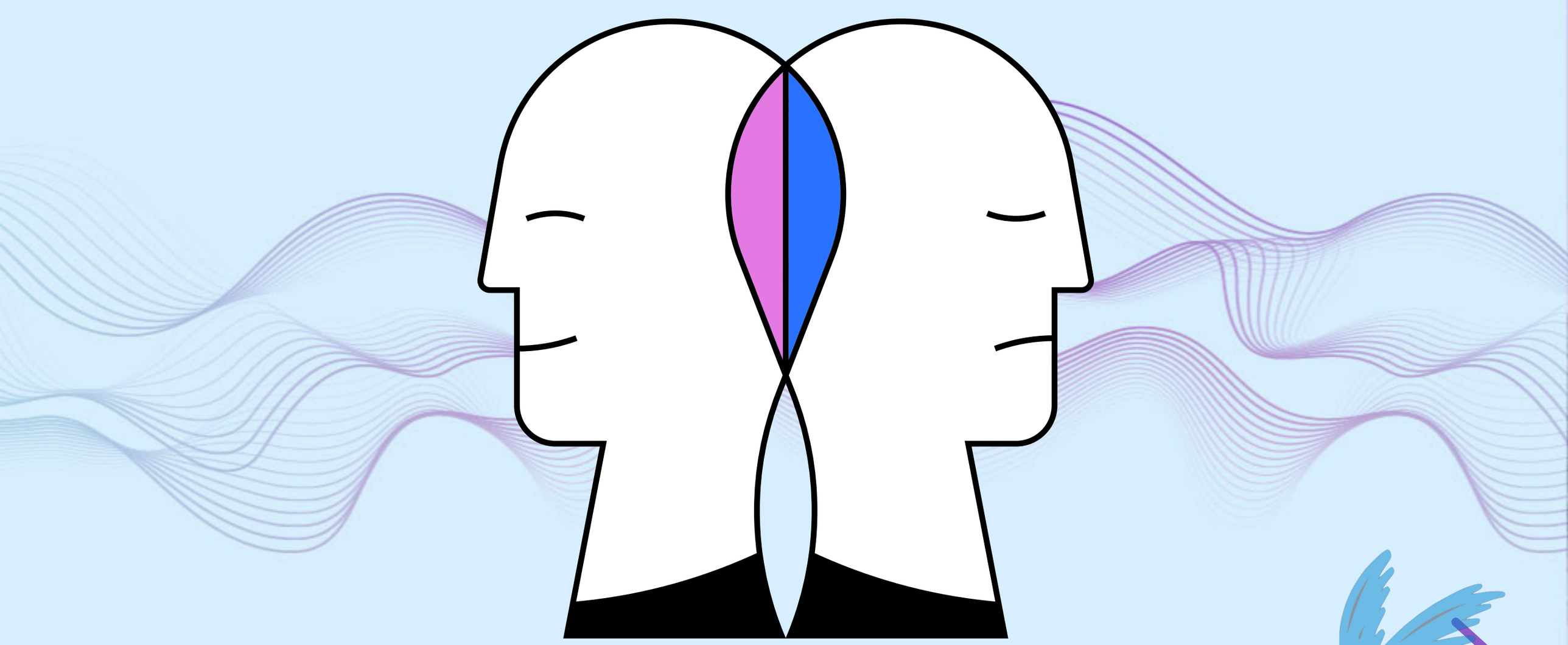
To achieve human-level creativity, AI systems need to understand the vast amounts of code we put together to build them—and identify novel ways to improve that code.



8

Social and emotional engagement

Robots and AI systems need to be able to interpret facial expressions and changes in tone that reveal underlying emotions. AI that is capable of empathy is still a distant prospect.



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