



# How AI will shape the Future of the Developer Role

Ricardo Niepel  
Senior Technology Specialist - Azure Application Innovation



[github.com/RicardoNiepel](https://github.com/RicardoNiepel)

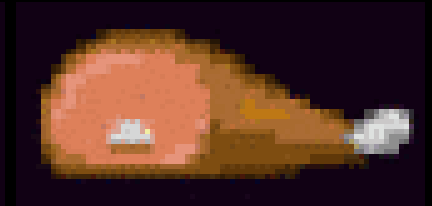


[ricardo.niepel@microsoft.com](mailto:ricardo.niepel@microsoft.com)



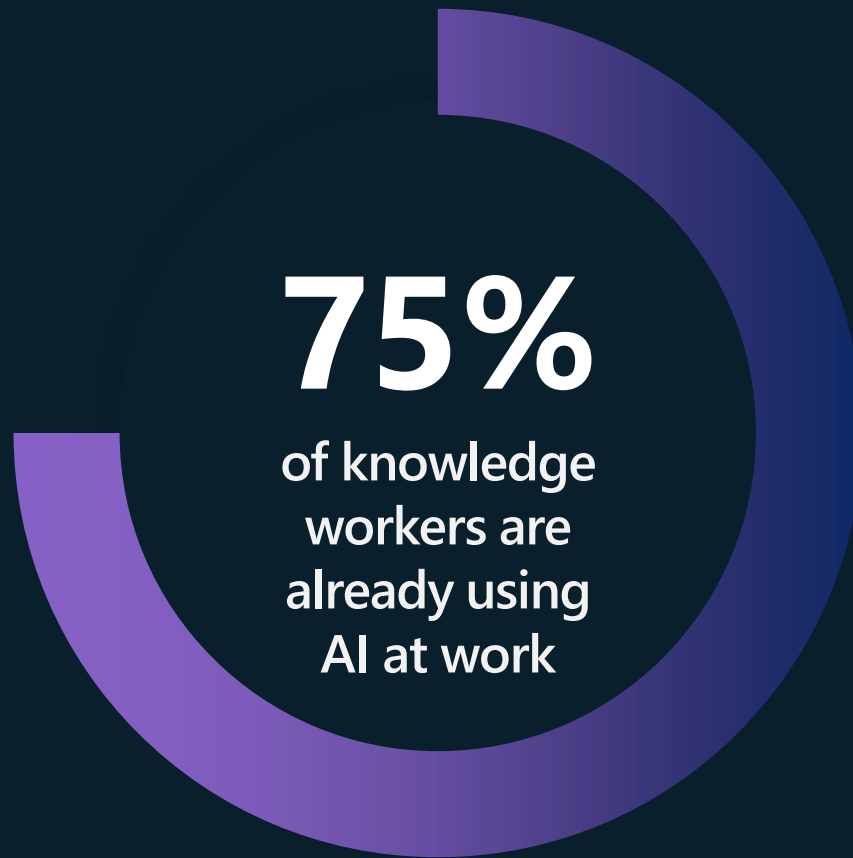
Open  
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Push  
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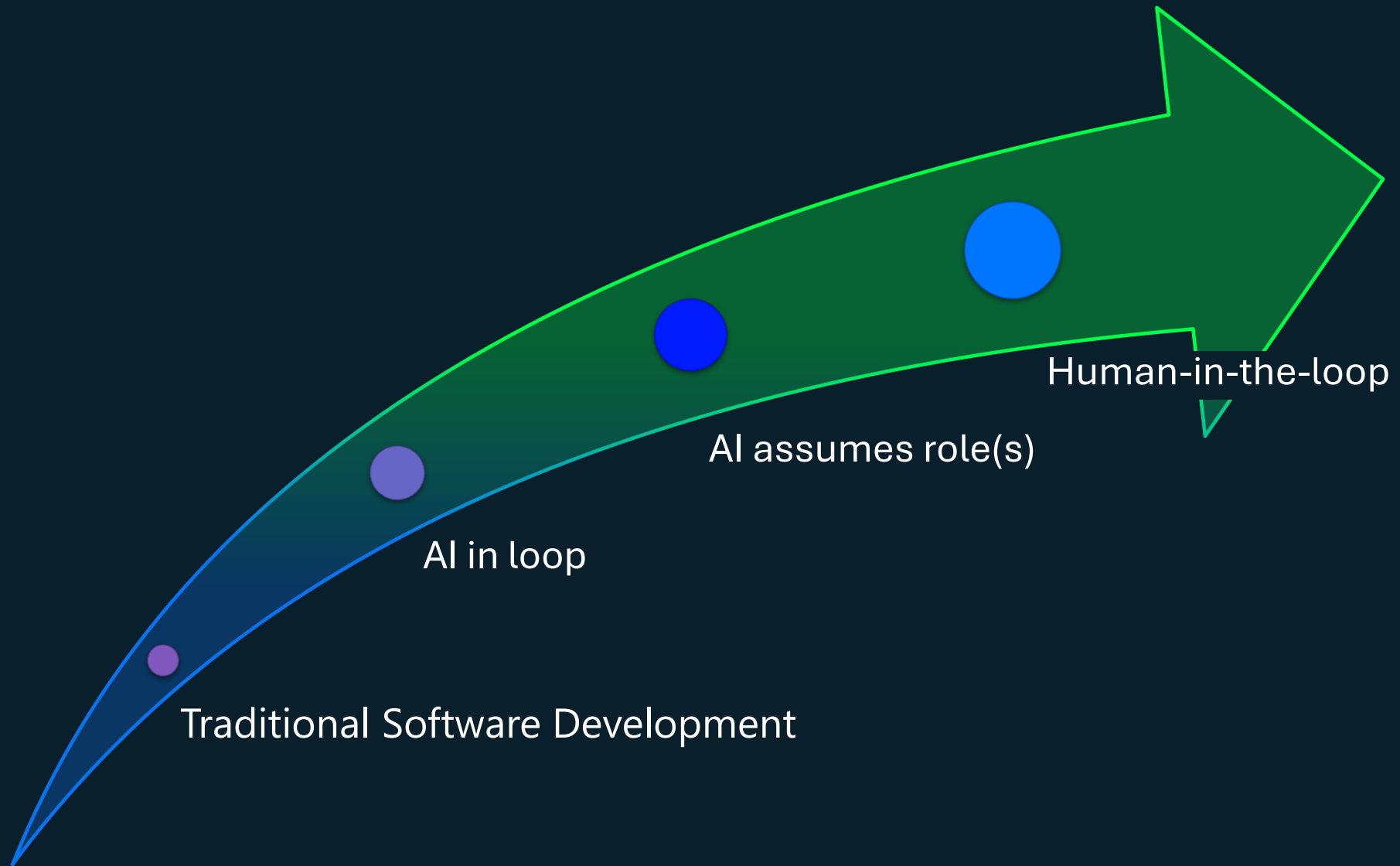


*Create an in-game screenshot of Guybrush Threepwood relaxing in a lounge between two palm trees, on an island, drinking a cocktail, on the side is a robot which gives a cocktail with one hand and is programming on a laptop with the other hand, wide shot, shallow depth of field, in the style of Monkey Island*

Microsoft Designer (DALL-E 3)







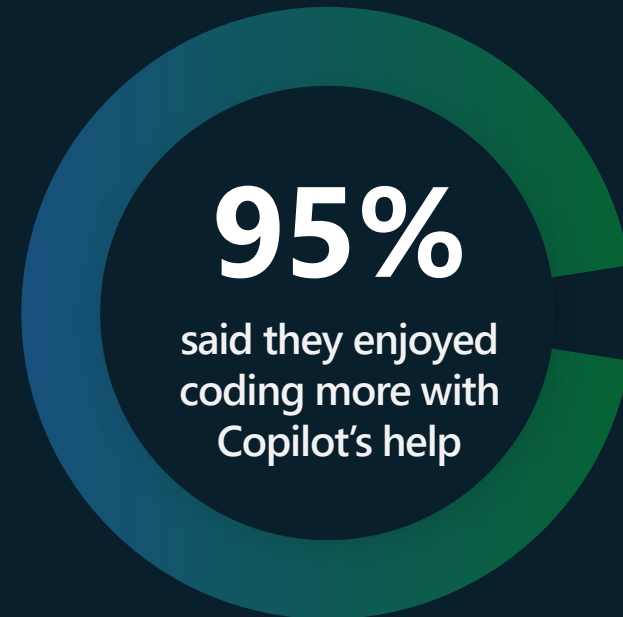
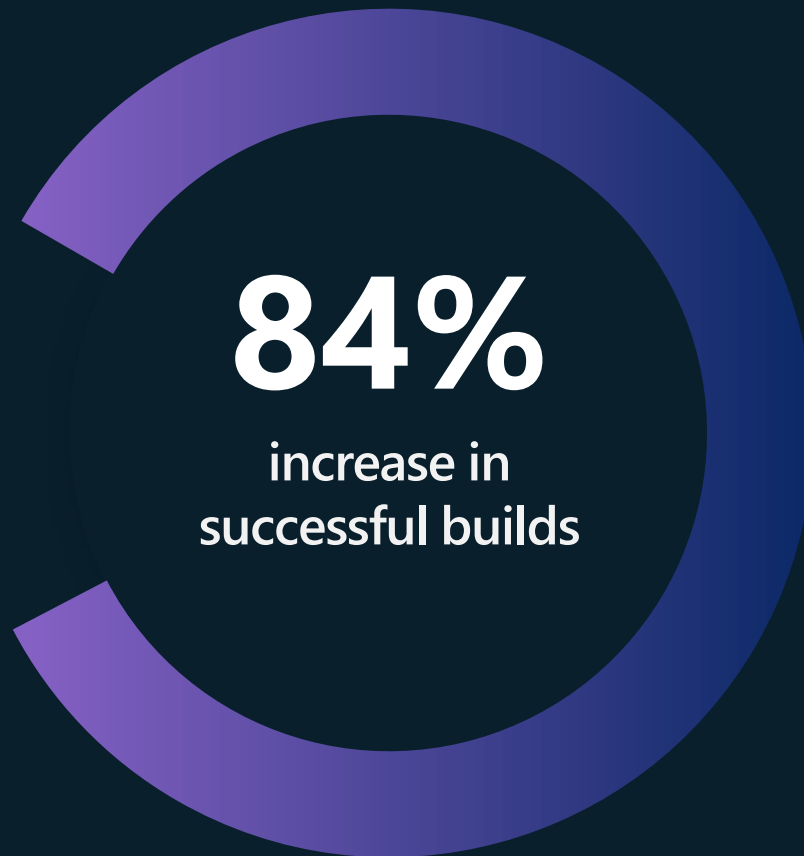
# “The age of programming has been reborn”

Thomas Dohmke, CEO of GitHub

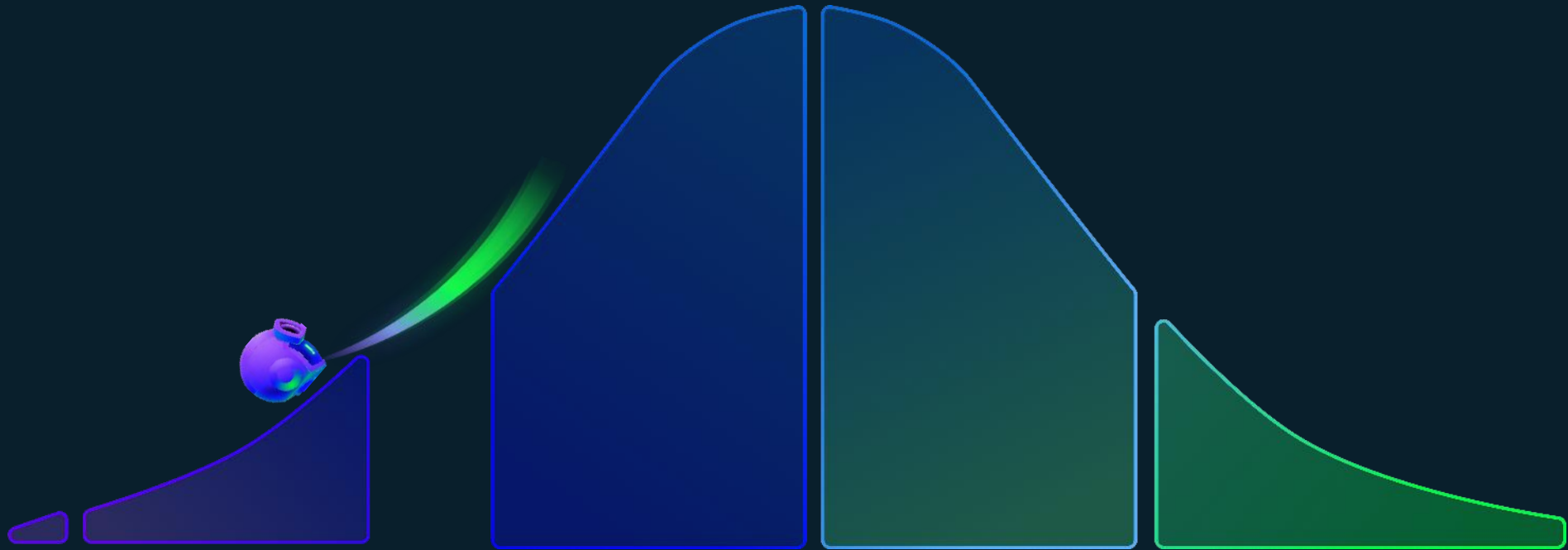


With AI, anyone can be a coder now | TED Talk | April 2024

<http://go.ted.com/thomasdohmke>



# Adopting Copilot



Crossing the Chasm, Geoffrey A. Moore. (Collins Business Essentials)

# Bridging the Gap



**Excitement**

**Ceremony**

**Clarity**

Successful rollout of GitHub Copilot | GitHub Copilot Learning Pathway | March 2024

<https://resources.github.com/learn/pathways/copilot/essentials/tips-for-a-successful-rollout-of-github-copilot/>



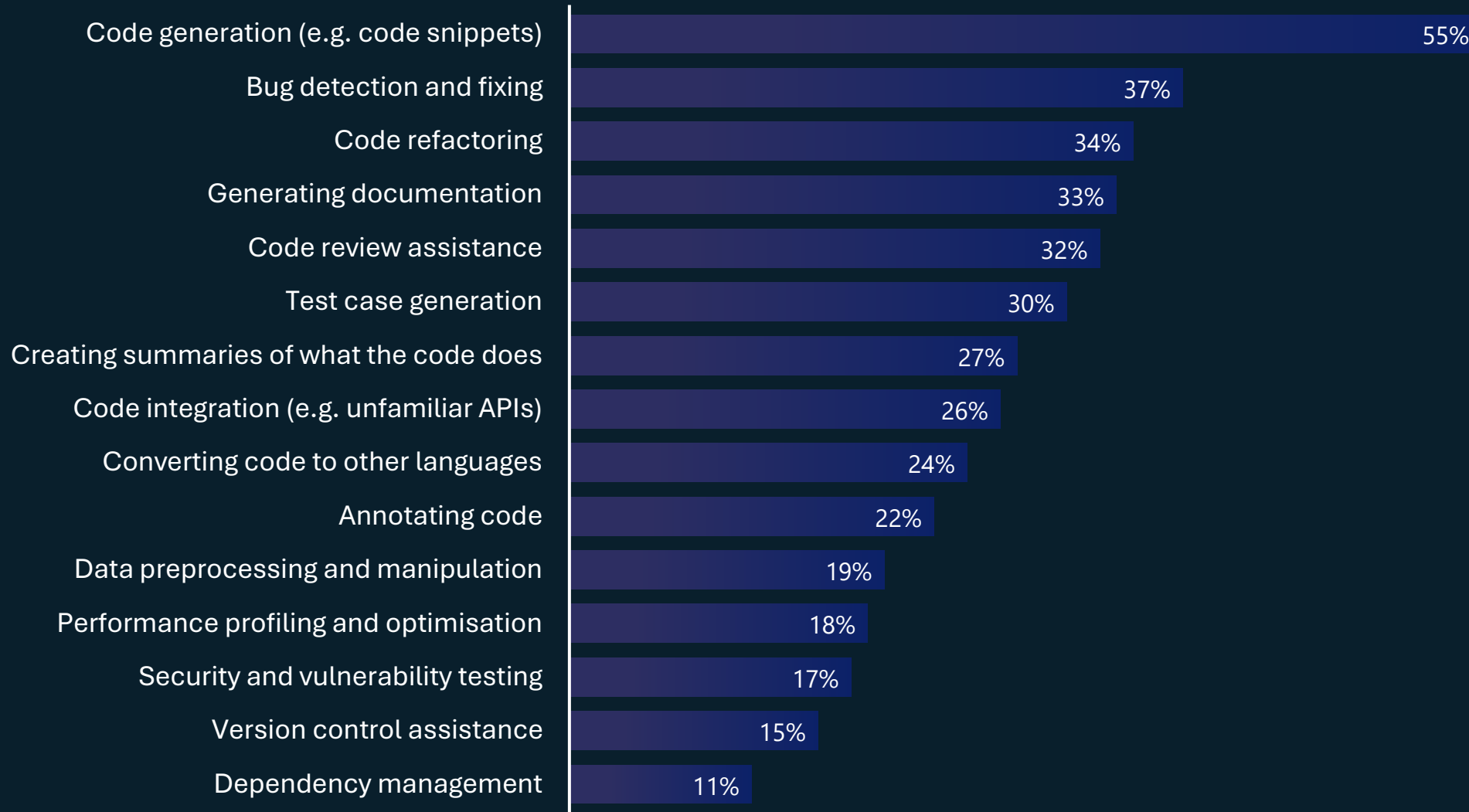
*the WHY of work* “companies have been renegotiating the psychological contract [...]

*the HOW of work* now companies must renegotiate the ‘operational contract’ [...]

**AI puts more power into the hands of workers  
in terms of the way the job gets done”**

Dr. Constance Noonan Hadley, Psychologist and Professor at Boston University

## What AI-assisted development tools are used for



Step 1

# Task

Step 2

# Spec

Step 3

# Plan

Step 4

# Code



Technical Preview

**Copilot Workspace**

Describe what you want  
in natural language

Copilot explains how it could  
work, and you can steer

Copilot takes your spec and  
creates a plan to make it real

Run it instantly with  
Codespaces, and create a PR

A developer's second brain: Reducing complexity through partnership with AI | GitHub | January 2024

<https://github.blog/2024-01-17-a-developers-second-brain-reducing-complexity-through-partnership-with-ai/>

**“LLMs should play the role of an advanced and personalized version of Wikipedia, not that of a guru.**

**Rather than giving canned answers & striving for authoritativeness,  
LLMs should make recommendations to humans  
[...]  
a commitment to keeping humans in the driving seat.”**

Dr. Daron Acemoğlu, Economist and Professor at MIT





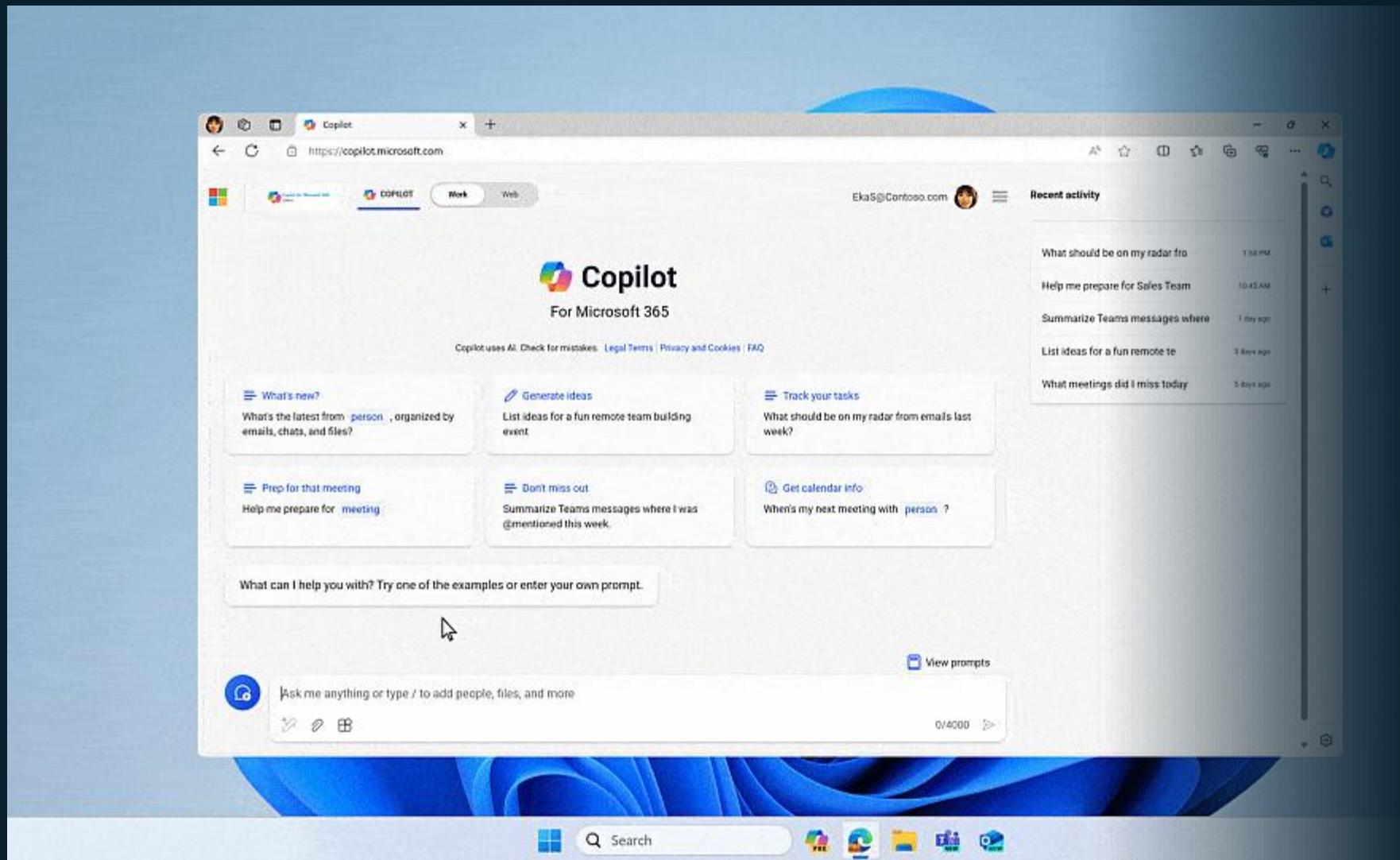
**37%**

lack of skilled  
personnel to  
implement AI



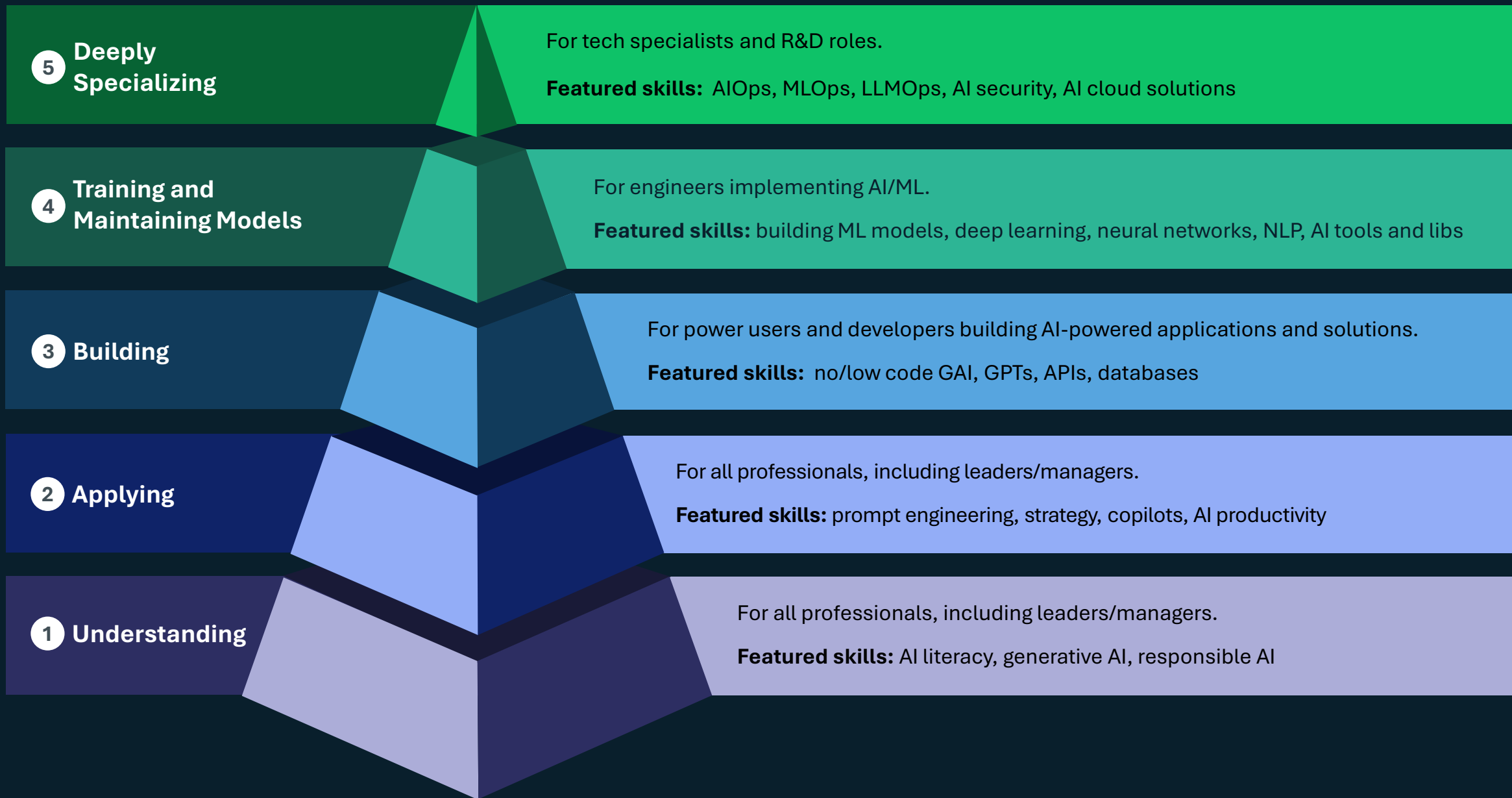
**30%**

lack of  
employees who  
are able to learn  
& work with AI



Microsoft and LinkedIn release the 2024 Work Trend Index on the state of AI at work | May 2024

<https://blogs.microsoft.com/blog/2024/05/08/microsoft-and-linkedin-release-the-2024-work-trend-index-on-the-state-of-ai-at-work/>



A New Framework for AI Upskilling Across Your Organization | LinkedIn | May 2024

<https://www.linkedin.com/business/talent/blog/learning-and-development/new-framework-for-ai-upskilling>



“we need to take a deep breath,  
zoom out, and remember  
that information revolutions  
are the normal state of human life”

Dr. Ada Palmer, Historian and Professor, University of Chicago

We are an information revolution species | AI Anthology | May 2023

<https://unlocked.microsoft.com/ai-anthology/ada-palmer/>



“AI is not helpful for beginners”

**Interactive** - Learner engages in dialogue, both sides are producing constructive responses

**GitHub Copilot example:** Copilot and learner co-writing source code, debating about it

**Constructive** - Learner generates or produces something new

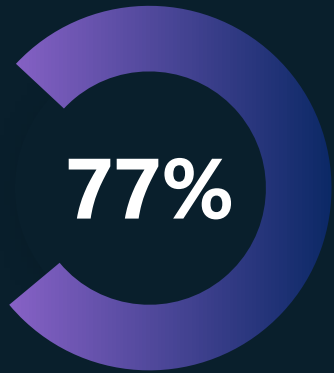
**GitHub Copilot example:** Rephrase your understanding, code it, let it review from Copilot

**Active** - Learner takes overt action

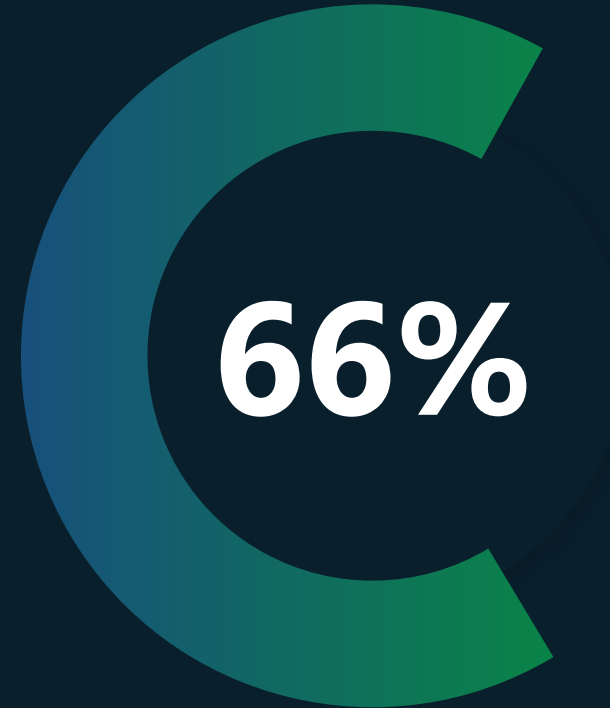
**GitHub Copilot example:** Asking Copilot specific questions, checking the references used

**Passive** - Learner receives information

**GitHub Copilot example:** Accept completions, reading general explanations from Copilot Chat



Leaders say  
early-in-career talent  
will get greater  
responsibilities  
due to AI



Leaders would not hire  
someone without AI skills

	AI in Applications	AI for Code Generation
<b>Transparency</b>	Users understand AI decision-making	Developers should understand how AI models generate code
<b>Fairness</b>	AI treats all users equally	AI does not introduce bias in code
<b>Reliability &amp; Safety</b>	AI behaves predictably and safely	AI-generated code is tested and secure
<b>Privacy &amp; Security</b>	AI protects user data and operates safely	AI respects data privacy in code generation
<b>Inclusiveness</b>	AI applications are usable and accessible by all	AI tools are accessible to a diverse group of developers
<b>Accountability</b>	Developers ensure AI acts within ethical boundaries	Developers are responsible for using AI-generated code





“I firmly believe that  
AI has enormous potential  
to make a positive impact  
on the lives of people  
with disabilities”

Anton Mirhorodchenko, Software Engineer & Machine Learning Expert

Realizing potential with AI | The ReadME Project from GitHub

<https://github.com/readme/stories/anton-mirhorodchenko>



A Better Tool



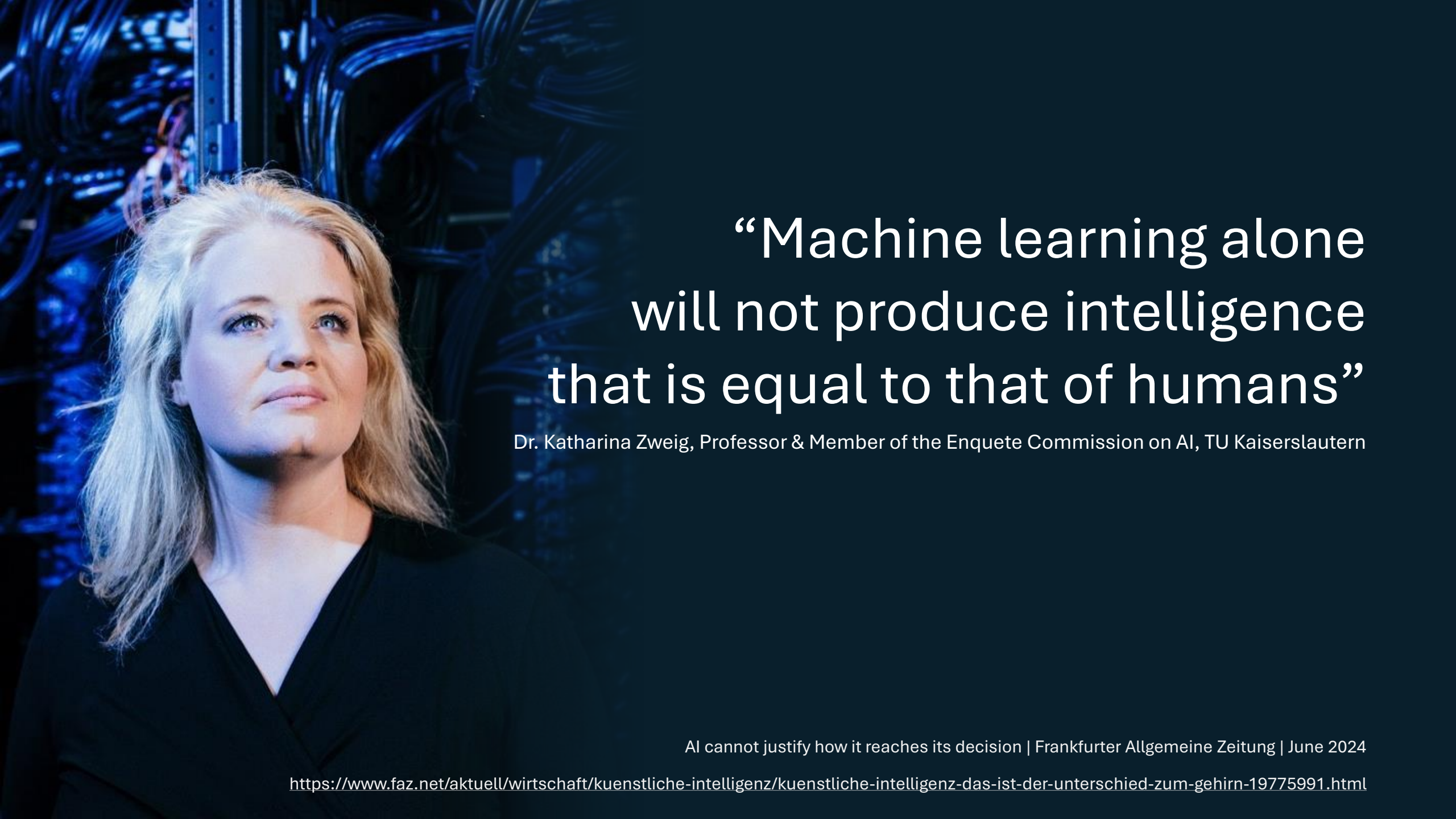
A Game Changer



An Entirely New Game

## **Number 19: Capability Caution**

There being no consensus,  
we should avoid strong assumptions regarding  
upper limits on future AI capabilities

A woman with blonde hair is looking upwards and to the right. The background is dark with blue light reflecting off server racks and cables.

“Machine learning alone  
will not produce intelligence  
that is equal to that of humans”

Dr. Katharina Zweig, Professor & Member of the Enquete Commission on AI, TU Kaiserslautern

AI cannot justify how it reaches its decision | Frankfurter Allgemeine Zeitung | June 2024

<https://www.faz.net/aktuell/wirtschaft/kuenstliche-intelligenz/kuenstliche-intelligenz-das-ist-der-unterschied-zum-gehirn-19775991.html>