

FUTURE TALENT FORUM 2024

# BUILDING THE FUTURE WITH AI

## BALANCING THE PROMISES AND CHALLENGES

**Richie Jones (he/him)**

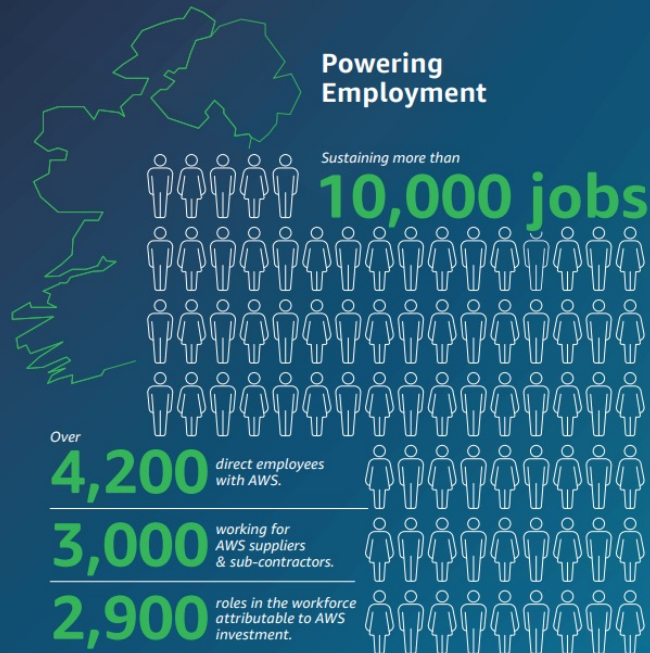
Enterprise Technologist  
Amazon Web Services



# Investing. Growing. Partnering.

## AWS Impact in Ireland

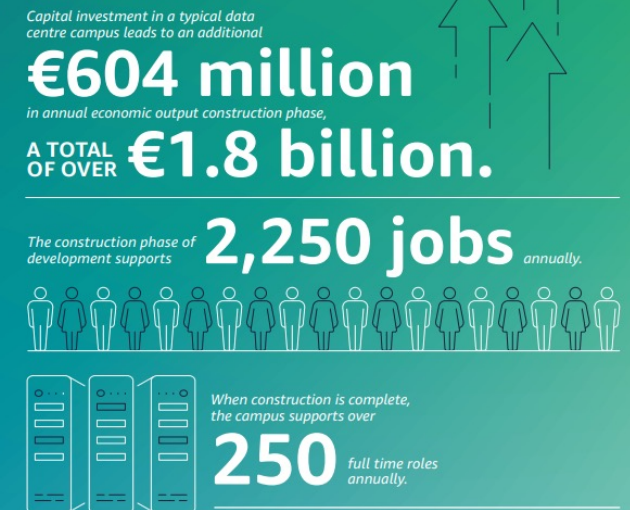
### Powering Employment



### Fostering cloud infrastructure and creating export opportunities for domestic contractors



### Creating economic opportunities for Ireland through new data centre infrastructure





Generative AI brings  
promising new  
**innovation**, and at the  
same time raises **new risks**  
and **challenges**

# AI – WHAT DO I MEAN ?



## Artificial intelligence (AI)

Any technique that allows computers to mimic human intelligence using logic, if-then statements, and machine learning



## Machine learning (ML)

A subset of AI that uses machines to search for patterns in data to build logic models automatically



## Deep learning (DL)

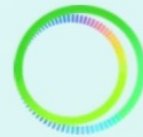
A subset of ML composed of deeply multi-layered neural networks that perform tasks like speech and image recognition



## Generative AI (GAI)

Powered by large models that are pretrained on vast corpora of data and commonly referred to as foundation models (FMs). LLMs (large language models) are part of generative AI focused on language tasks.

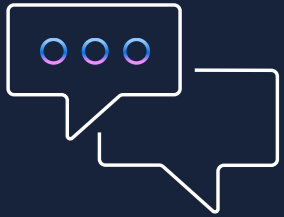
**slalom**



**CoolPlanet**



# WHY IS COOLPLANET USING AI?



**NEW EXPERIENCES**



**PRODUCTIVITY**



**INSIGHTS**



**CREATIVITY**



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# 2023 THE YEAR OF LEARNING



What is generative AI?

Is this secure?

Do I need to become a prompt engineer?

How do I choose a model?

Where do I get started?



What does this mean for my business?

What is a Foundation Model?



Which models should we try out?

What is FM?

What is a Large Language Model?



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# 2024

## THE YEAR OF IMPLEMENTATION

(FOR SOME)



How do I prioritize my projects?

How can I lower my costs?

How do I make this real?

What customization method should I use?



How I can I scale this?

Which models should I use?

Should I train my own model?

How do I manage risks?



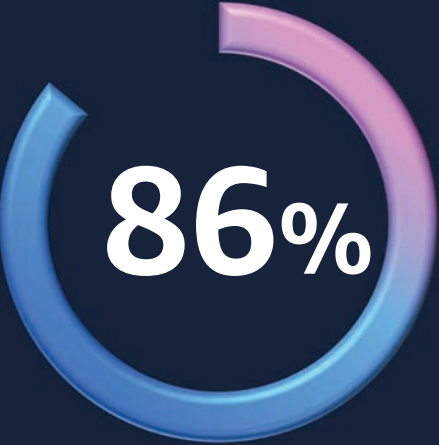
How can we move faster?



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# LOOKING FORWARD TO 2028

## What do companies expect?



86%

to adopt AI Tools across  
their organization



91%

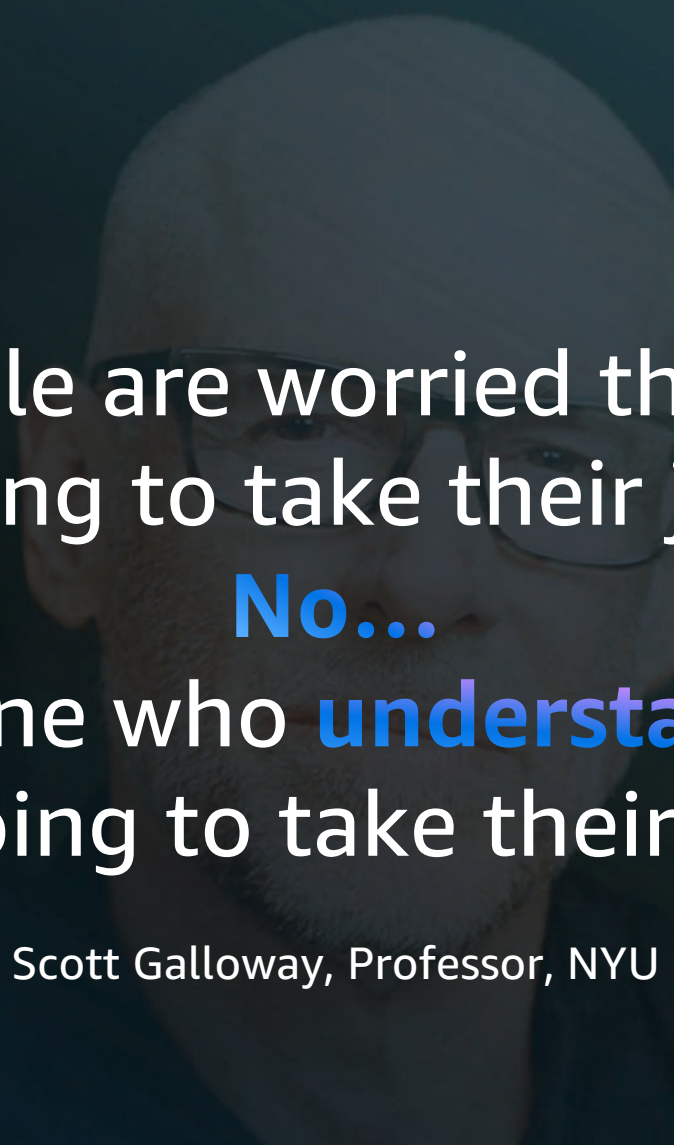
to see benefits from  
using generative AI



41%

AI technologies to increase  
organizational productivity



A faded, grayscale portrait of Scott Galloway, a man with glasses and a beard, serves as the background for the text.

"People are worried that AI  
is going to take their job...

**No...**

someone who **understands AI**  
is going to take their job."

Scott Galloway, Professor, NYU

# SKILL EVALUATION



What is my  
**inventory of skills?**



How will my skills needs  
**change over time?**



How is our industry  
and business model  
**changing skills required?**

# THE SKILLS YOU NEED

Data science and  
machine learning



Software  
engineering



Cloud  
engineering



Domain  
knowledge

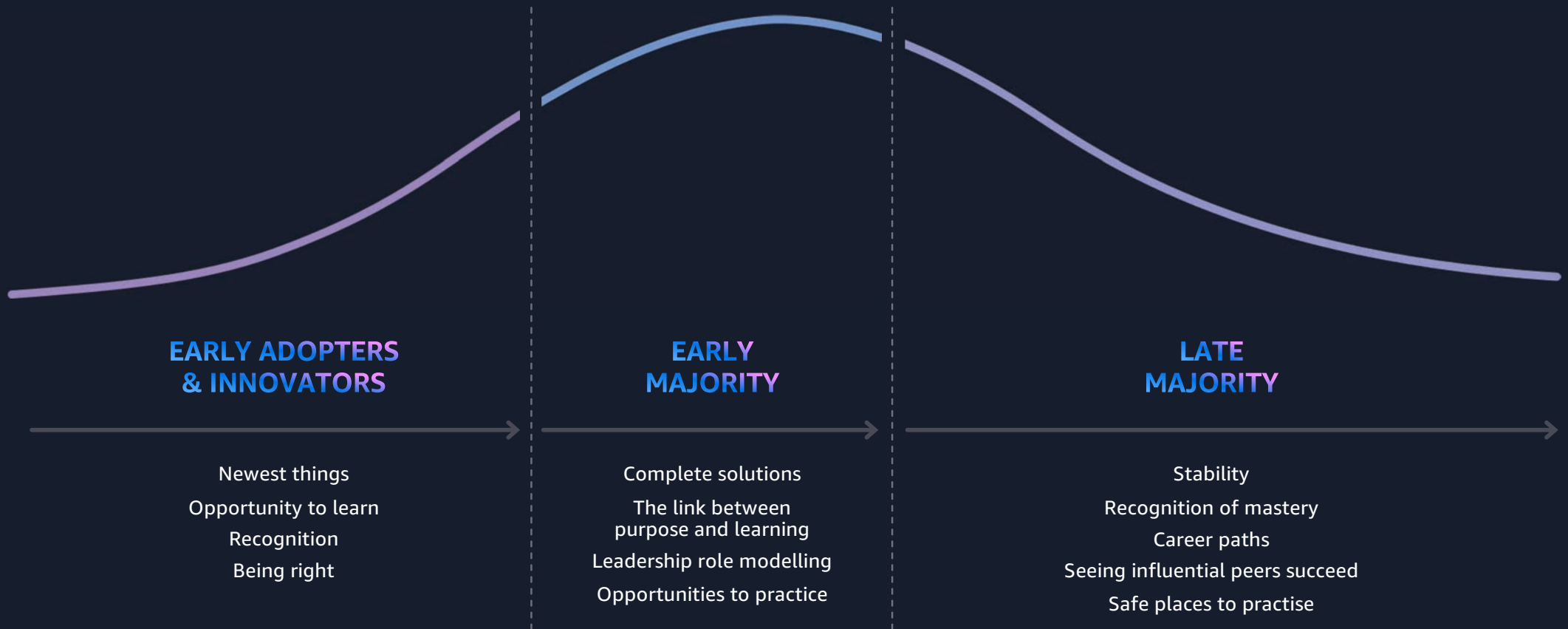


Critical thinking  
and problem-solving



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# UNDERSTAND PERSPECTIVES



# CREATING A “BOUGHT-IN” TEAM



**BE CLEAR ON THE  
'WHY'**



Give them meaning



**HOW WE ARE  
DOING IT**



Give them confidence



**WHAT IS IN IT  
FOR THEM**



Why they should care

# SELECTING THE RIGHT PROJECT



**BE DRIVEN BY  
BUSINESS VALUE**

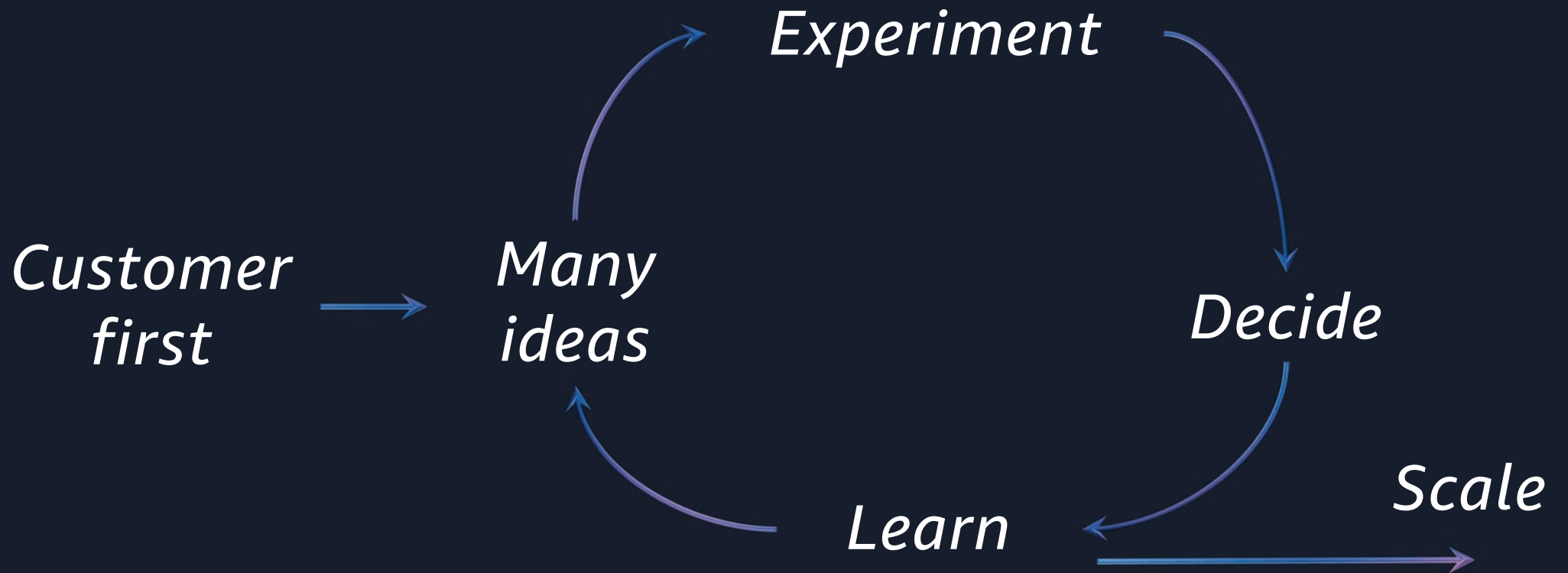


**PLAN TO GROW...  
NOT JUST TO CUT**



**IMPACTFUL**

# IMPLEMENTING THE RIGHT PROJECT





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same time raises **new risks**  
and **challenges**

# EMERGING RISKS AND CHALLENGES



**VERACITY  
(E.G.,  
HALLUCINATIONS)**



**TOXICITY  
& SAFETY**



**INTELLECTUAL  
PROPERTY**



**DATA PRIVACY**

# VERACITY (E.G., HALLUCINATIONS)



## VERACITY (E.G., HALLUCINATIONS)

Foundation model output  
that is verifiably false,  
based on information in  
the prompt or in external  
knowledge repositories

### Human

tell me about some papers by michael kearns

### Assistant

Michael Kearns is a prominent computer scientist known for his work in machine learning, computational learning theory, and algorithmic game theory. Some of his well-known papers include:

- "Axioms of Computational Complexity for Multi-Player Games" (with Yevgeniy Dodis) - This paper proposed some of the first complexity theoretic frameworks for studying multi-player games. It introduced concepts like polynomial-time Nash equilibria that have become central to algorithmic game theory.
- "An Experimental Study of the Coloring Problem on Human Subject Networks" (with Laura Fortunato) - This paper studied graph coloring experiments on social networks, providing insight into human cognitive and social behavior.
- "Laws of the Game: How the Principles of Game Theory Apply to Life" (with Ken Arrow) - This popular science book explained game theory and its applications in an accessible way for general audiences.
- "Learning in the Presence of Malicious Errors" (with Richard Lipton) - This seminal paper studied the problem of PAC learning in the presence of malicious noise. It introduced the "agnostic learning" framework which has become central to studying robust and adversarial machine learning.



# EMERGING RISKS AND CHALLENGES



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**DATA PRIVACY**

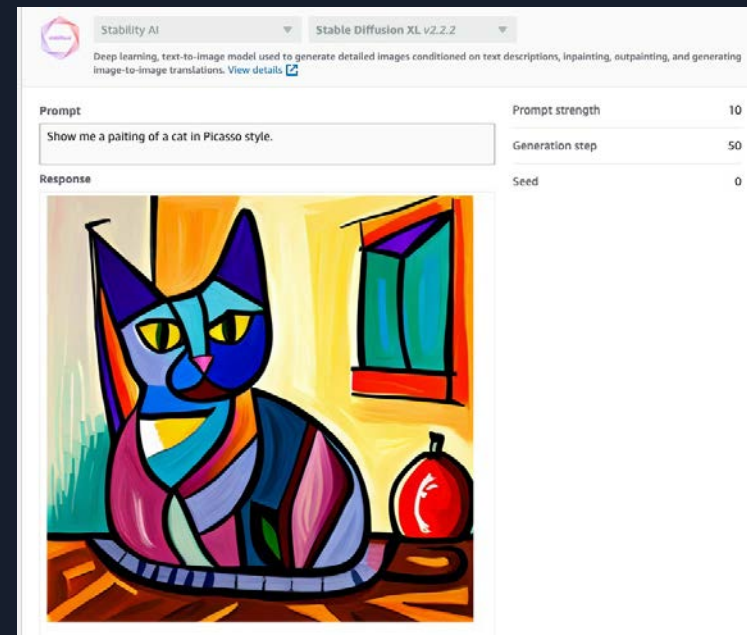
# INTELLECTUAL PROPERTY



## INTELLECTUAL PROPERTY

Tendency of early LLMs to produce outputs that were verbatim regurgitation of parts of their training data, resulting in privacy and copyright concerns

Ask a foundation model to create a painting of a cat in the style of Picasso



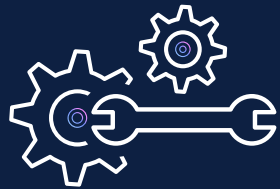
## **RESPONSIBLE AI:**

**“AI that is innovative and trustworthy and respects human rights and democratic values”**



# RESPONSIBLE AI CONSIDERATIONS

## CONTROLLABILITY



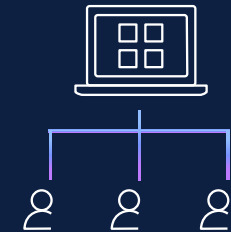
## PRIVACY & SECURITY



## SAFETY



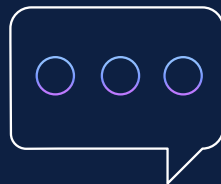
## FAIRNESS



## VERACITY & ROBUSTNESS



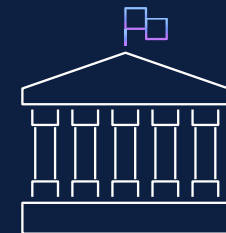
## EXPLAINABILITY



## TRANSPARENCY



## GOVERNANCE



Think big...  
start small



# Thank you!

Richie Jones

Enterprise Technologist  
Amazon Web Services

