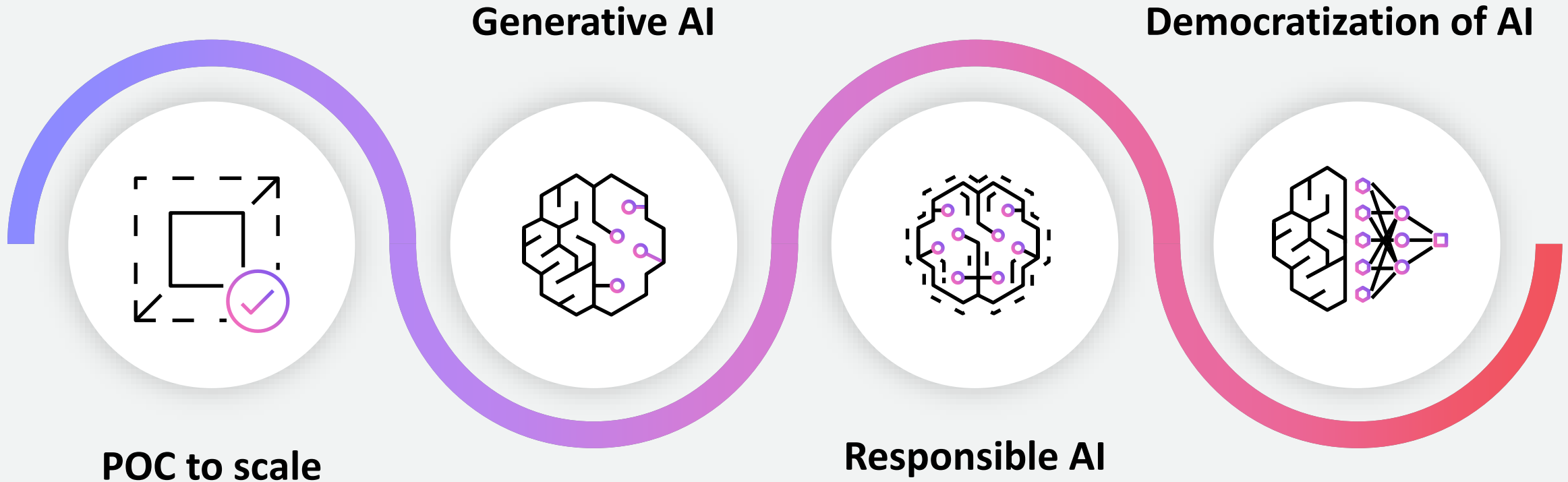aws

From theory to practice: accelerating AI/ML innovation
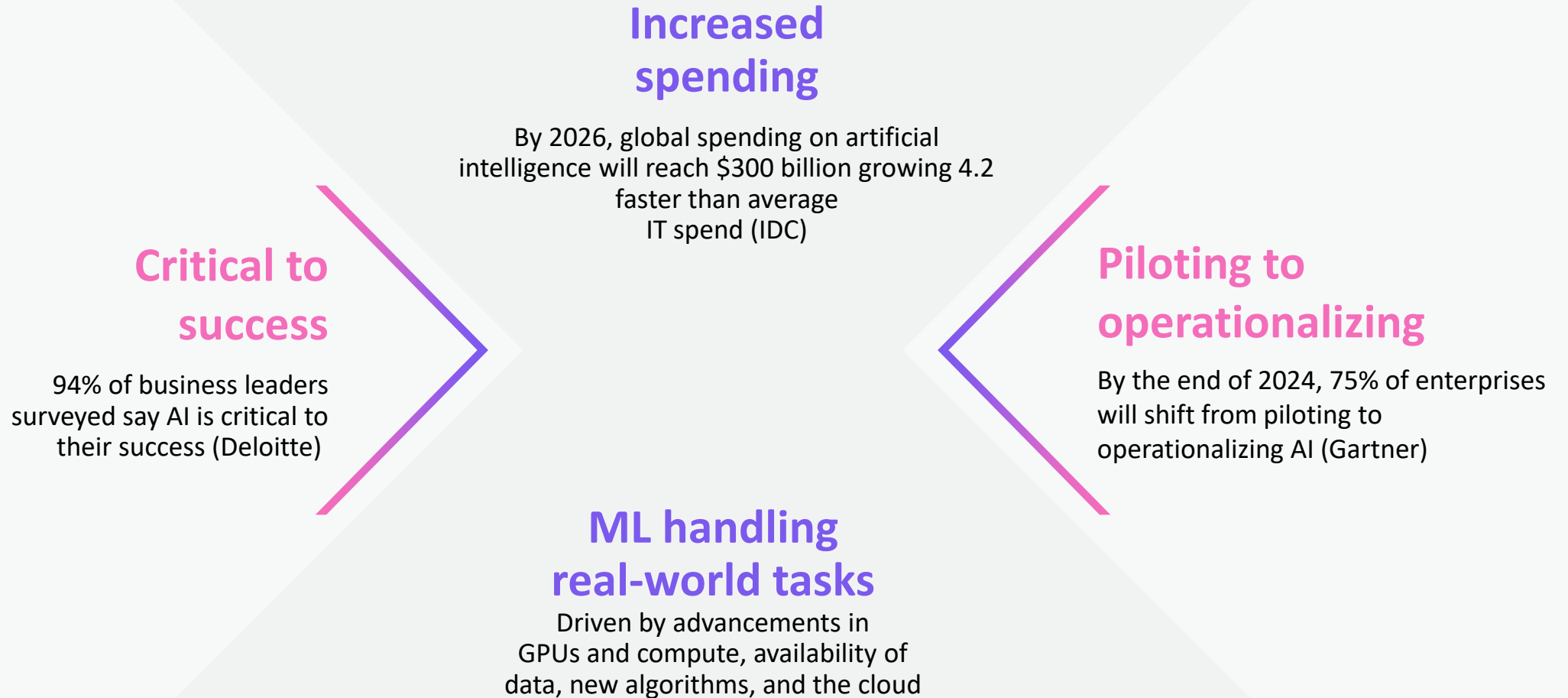
Sherry Marcus

Director of Applied Science, Artificial Intelligence and Machine Learning
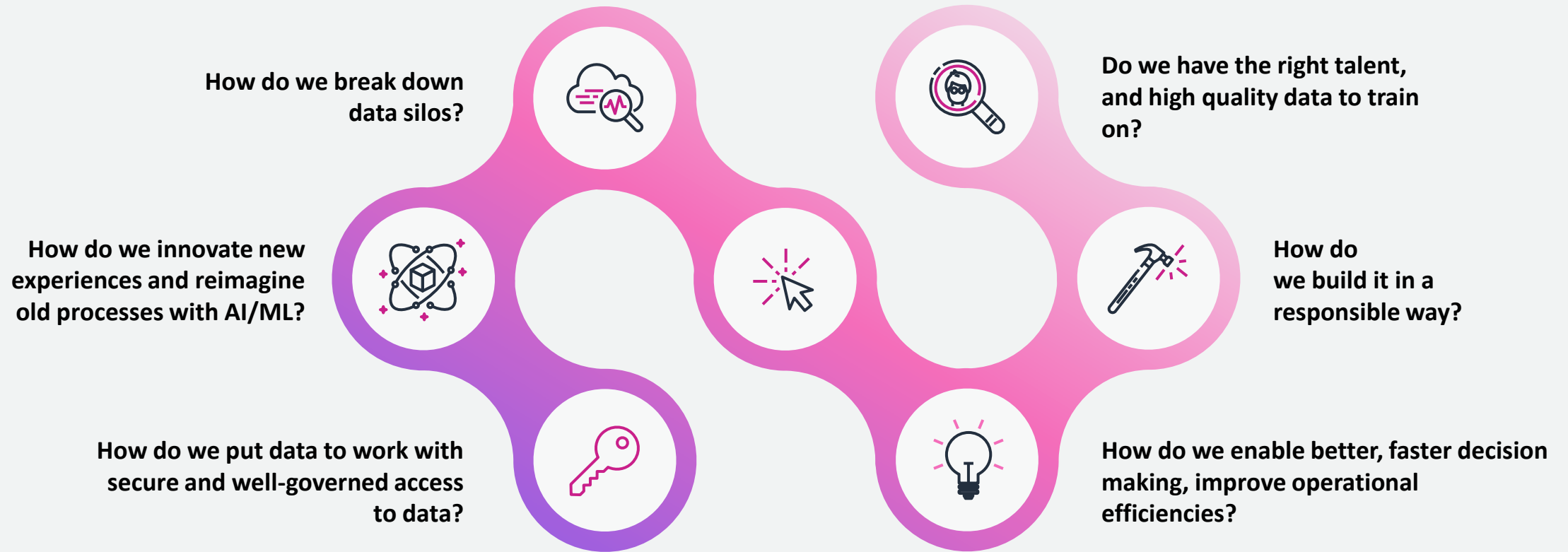Amazon Web Services

From theory to practice: operationalizing AI/ML

Generative AI

Democratization of AI

POC to scale

Responsible AI

Machine learning has changed the landscape

Increased spending

By 2026, global spending on artificial intelligence will reach $300 billion growing 4.2 faster than average
IT spend (IDC)

Critical to success

94% of business leaders surveyed say AI is critical to their success (Deloitte)

Piloting to operationalizing

By the end of 2024, 75% of enterprises will shift from piloting to operationalizing AI (Gartner)

ML handling real-world tasks

Driven by advancements in GPUs and compute, availability of data, new algorithms, and the cloud

The AI/ML journey is filled with challenges

How do we break down data silos?

Do we have the right talent, and high quality data to train on?

How do we innovate new experiences and reimagine old processes with AI/ML?

How do we build it in a responsible way?

How do we put data to work with secure and well-governed access to data?

How do we enable better, faster decision making, improve operational efficiencies?

How to accelerate a POC to production

ASSESS & PLAN

TEST & VALIDATE

MOBILIZE & DEPLOY

SCALE & MODERNIZE

And scale with proven outcomes

Advancing voting with ML

Accelerating innovation for patients

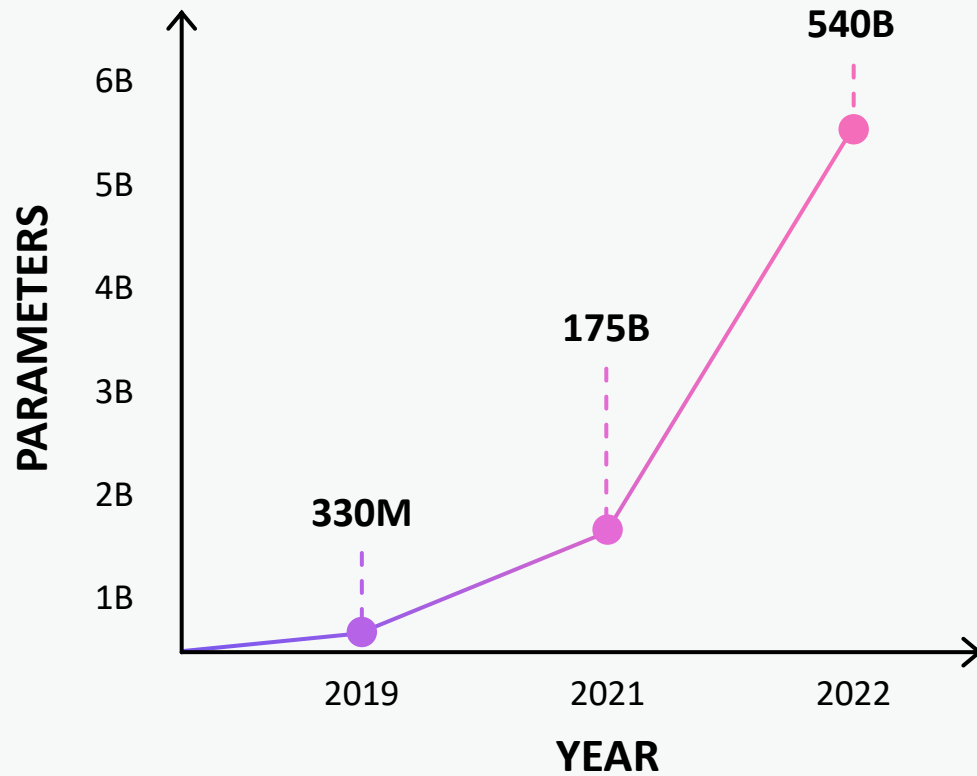**Diving deep for data**

swimming
australia

Question: what is generative AI?

- Creates new content and ideas, including conversations, stories, images, videos, and music
- Powered by large models that are pretrained on vast corpuses of data and commonly referred to as foundation models (FMs)
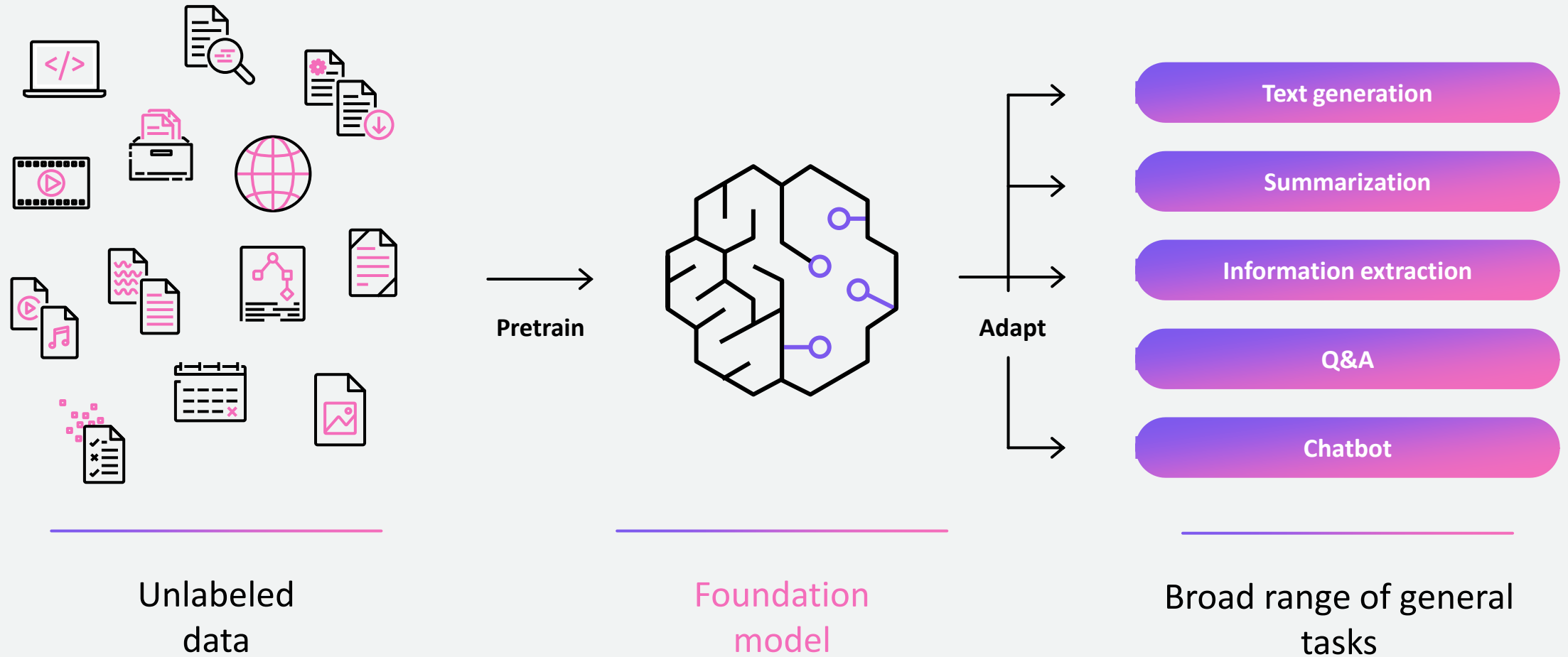
Rise of foundation models

2019–2022

1,600x

increase in size of model as
measured by number
of parameters

How foundation models work

Pretrain

Adapt

Text generation

Summarization

Information extraction

Q&A

Chatbot

Unlabeled
data

Foundation
model

Broad range of general
tasks

AI and ML continue to grow and evolve

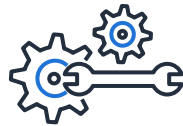Millions of people have engaged with generative AI

New ways to make art, compose letters, write stories, etc.

Key concerns around bias mitigation, truthfulness, privacy, intellectual property, and more

With the growth of AI comes the recognition that we must all use it **responsibly**

Our commitment

Our commitment to develop AI and machine learning in a responsible way is integral to our approach

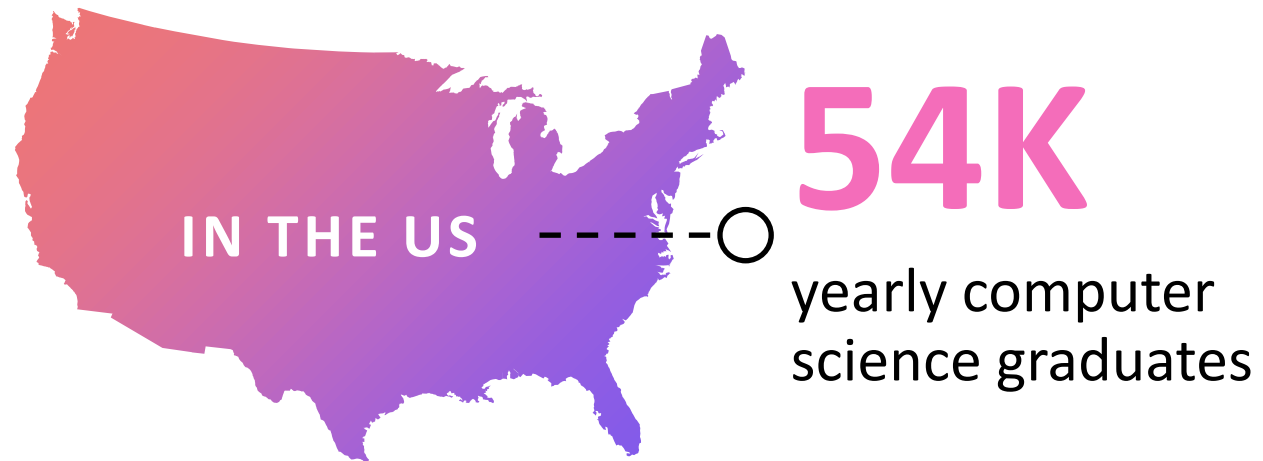Transforming responsible AI from theory to practice

Integrate responsible AI into the end-to-end ML lifecycle

Nurture and educate a more diverse generation of leaders in ML

Advance the science behind responsible AI

IN THE US

54K
yearly computer science graduates

IN THE US

54K
yearly computer
science graduates

1M
jobs added to the AI
workforce by 2029

310,000 developers trained on machine learning with AWS DeepRacer

AWS AI & ML
Scholarship Program

$10M
awarded to students

2,000
students selected

Resources: from theory to practice

ML Solutions Lab

AWS DeepRacer

AI/ML Scholarship Program

Generative AI

Responsible AI

Get started today

Thank you!