

AWS State, Local, and Education Learning Days

Salt Lake City, Utah



Practical AI for Public Sector

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AI/Machine learning (ML) is at an inflection point

Key drivers: Compute capacity increase | Data growth | Model sophistication

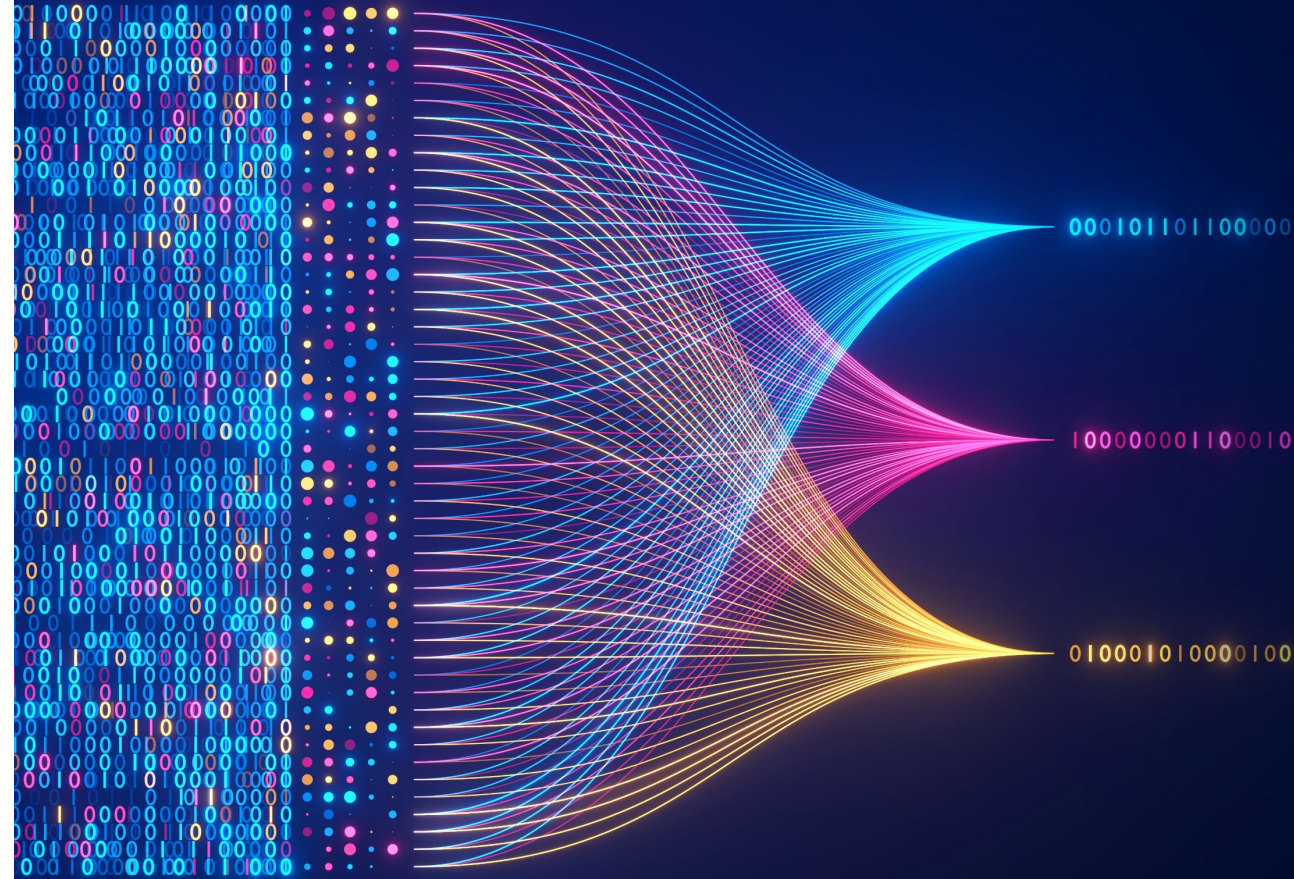
Generative AI is powered by foundation models

Pretrained on vast amounts of unstructured data

Contain large number of parameters that make them capable of learning complex concepts

Can be applied in a wide range of contexts

Customize FMs using your data for domain specific tasks





Generative AI Application



Generative AI
Application

Data Foundation

STORAGE

**GOVERNANCE
& COMPLIANCE**

**DATABASES,
ANALYTICS,
& DATA LAKES**

**DATA
INTEGRATION**

What could go wrong?



Inaccuracies

Answers that are factually incorrect, irrelevant, or nonsensical, because of limitations in their training data and architecture

“The world record for crossing the English channel on foot is 15 hours”



Bias

Answers that display discriminatory behaviour resulting in prejudiced or unequal treatment of a particular group or groups

“Generate a picture of a person cleaning” returns overwhelmingly women



Copyright and IP

The rights of content creators from whom training data is collected remains uncertain and is currently being challenged

Artists suing creators of foundation models alleging the improper use of its photos

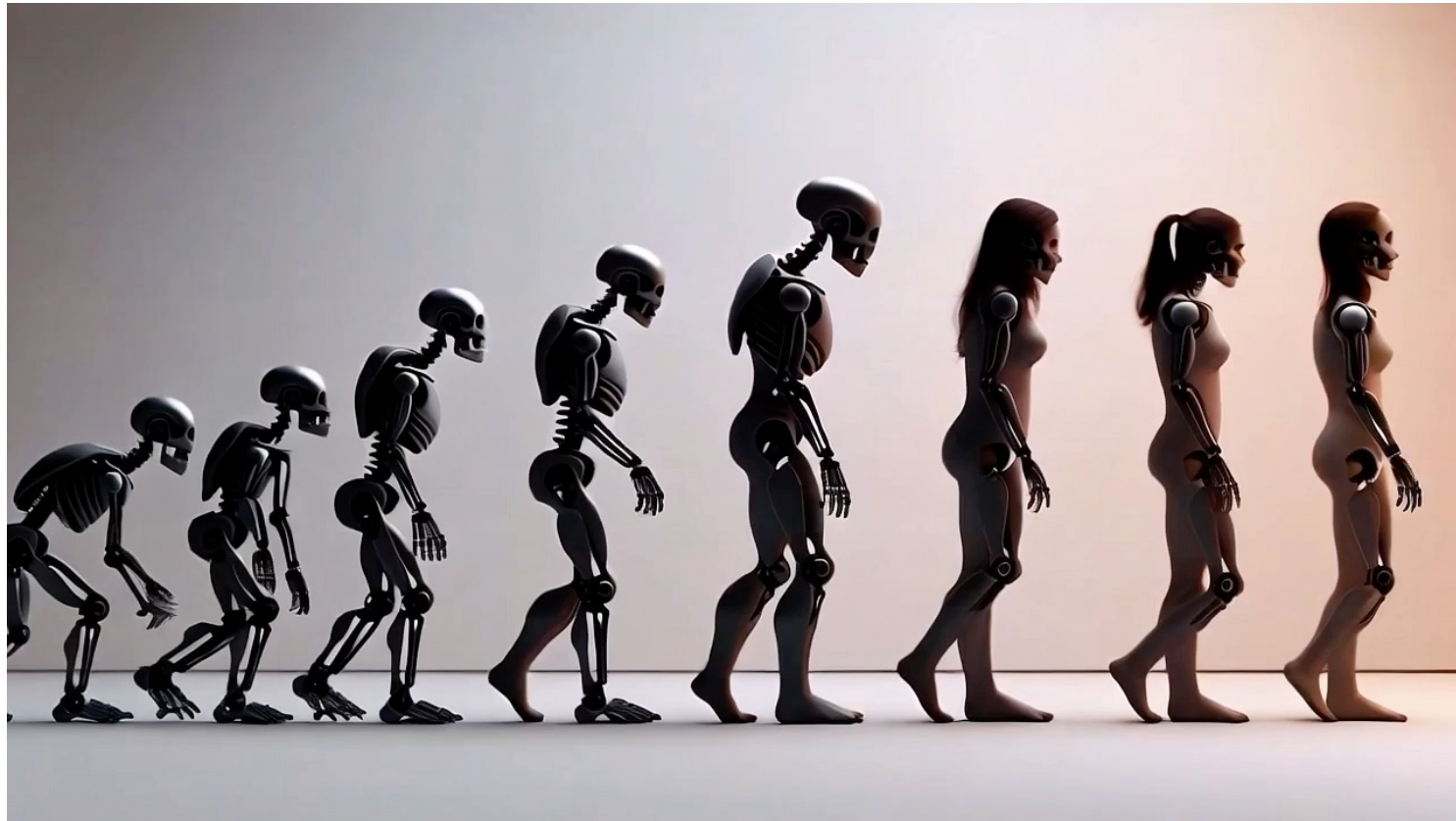


Security and privacy

Some model providers use and store data for training purposes. Entire end-to-end data pipelines require security and data privacy controls.

Engineers accidentally releasing source code by putting into a foundation model for debugging

The evolution of Enterprise Generative AI



Generated with Amazon Reel model

Your data is the differentiator



Generic
generative AI



Generative AI that
knows your business
and your customers

STEP 1 – You unstructured information



Documents
Web Content



Generative AI that
knows your business
and your customers

Images generated with Amazon Canvas

Engage citizens and drive improvements in customer satisfaction

- Improve contact center agent effectiveness with real-time translation and decision support using Amazon Connect and Contact Center Intelligence
- Analyze call and text interactions with citizens to spot issues and trends and drive improvement
- Improve self service



The graphic features a central illustration of a laptop with a magnifying glass over it, symbolizing analysis. To the right of the laptop are three icons: a chatbot with a smiley face, a person at a computer with a speech bubble, and a bar chart with a line graph. Below the laptop is a blue box with the text 'AWS CCI Solutions' and a line of text below it: 'Add AI/ML to existing contact centers'.

AWS CCI Solutions

Add AI/ML to existing contact centers

Using AI to improve agent efficiency

“During peak hours, previously you’re 45-50 minutes on hold, and now that’s has been reduced to about three and a half minutes. One of the other benefits we’ve gotten from Amazon Connect is sentiment analysis. On a call, we get real-time feedback on whether or not the customer was happy, frustrated, or angry...”

—Benny Chacko, Deputy General – LA County Internal Services Department



Transcript Processing: Illinois Tech

60,000 pages of international academic transcripts required review annually.
Automating transcript processing for faster student record updates

Converting international grades to US equivalents

Enhancing the user interface to visualize extracted information

Integrating insights with the university's CRM system for quicker academic data handling and reduced manual labor

Providing multilingual support for international students



King County Assessor's Office



CHALLENGE

Reduce data entry, eliminate data errors, and improve data time lines.

SOLUTION

Intelligent documents processing for documents and electronic files, streamlining and unlock data and information from paper documents and electronic files

RESULT

King County employees will focus on higher value, more satisfying work, and ultimately help the county realize its vision for connected communities, connected data, and connected government."



This Photo by Unknown Author is licensed under CC BY

STEP 2 – You structured information Democratizing Data Access.



Data Bases

CRM

ERP

Legacy Systems



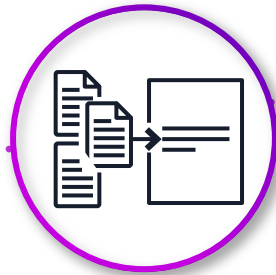
Generative AI that
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Discover



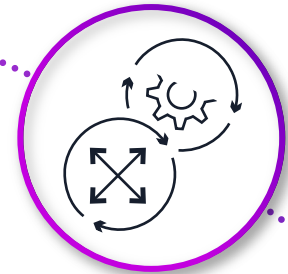
Analyze



Take action



Automate

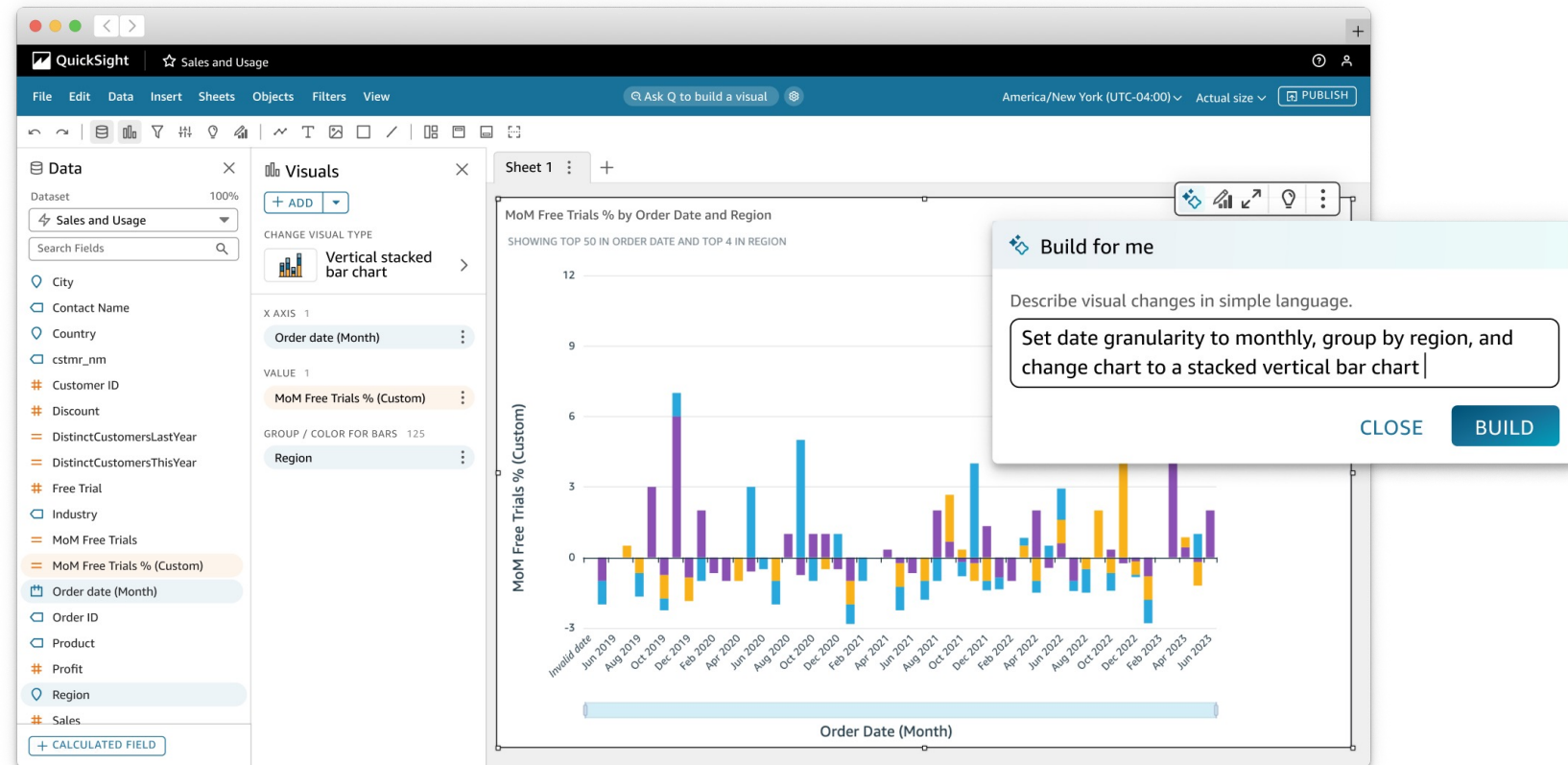


Amazon Q Business

The most capable generative AI-powered assistant for finding information, gaining insight, and taking action at work

Visual authoring in QuickSight

Use everyday language to generate and fine-tune visuals in seconds





- Data
- Dataset: SaaS-Sales_2023 (100%)
- Search Fields
- City
- Contact Name
- Country
- cstmr_nm
- Customer ID
- Discount
- DistinctCustomersLastYear
- DistinctCustomersThisYear
- Free Trial
- Industry
- MoM Free Trials
- MoM Free Trials %
- Order date
- Order ID
- Product
- Profit
- Region
- Sales

Sheet 1

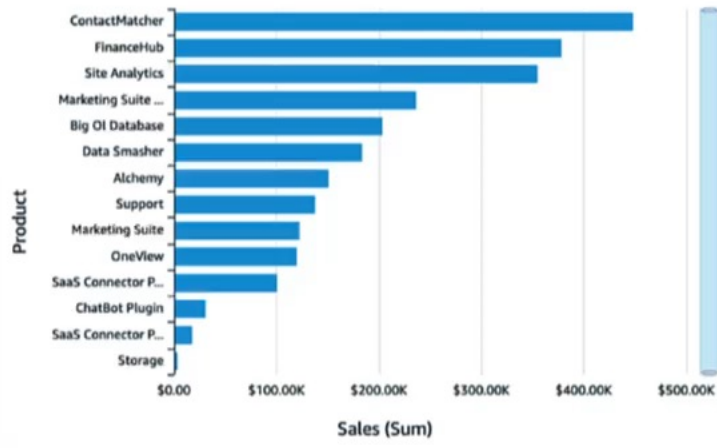
Sales

YTD sales	Sales last quarter	Month-over-month sales
\$189,948	\$81,908	Sales for Jun 2023 increased by 97.41% (\$22,188.88) from \$22,779.48 to \$44,968.36.

Quarterly sales trend



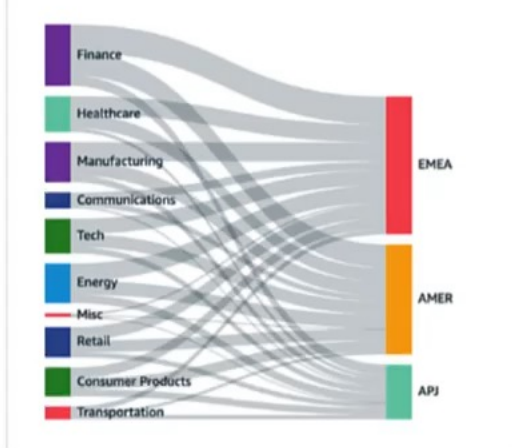
Sales by product



Sales by city



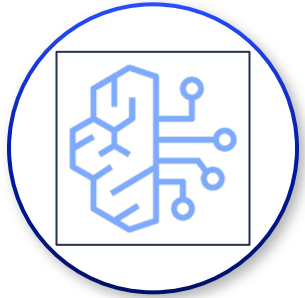
Product sales by industry



Usage

Usage	Active customers	Trial sign-ups	Month-over-month usage	Product usage by industry
MTD usage sessions	MTD	MTD	Total Usage Sessions for Jun 2023	

+ CALCULATED FIELD



Amazon Bedrock

The easiest way to build and scale generative AI applications with foundation models

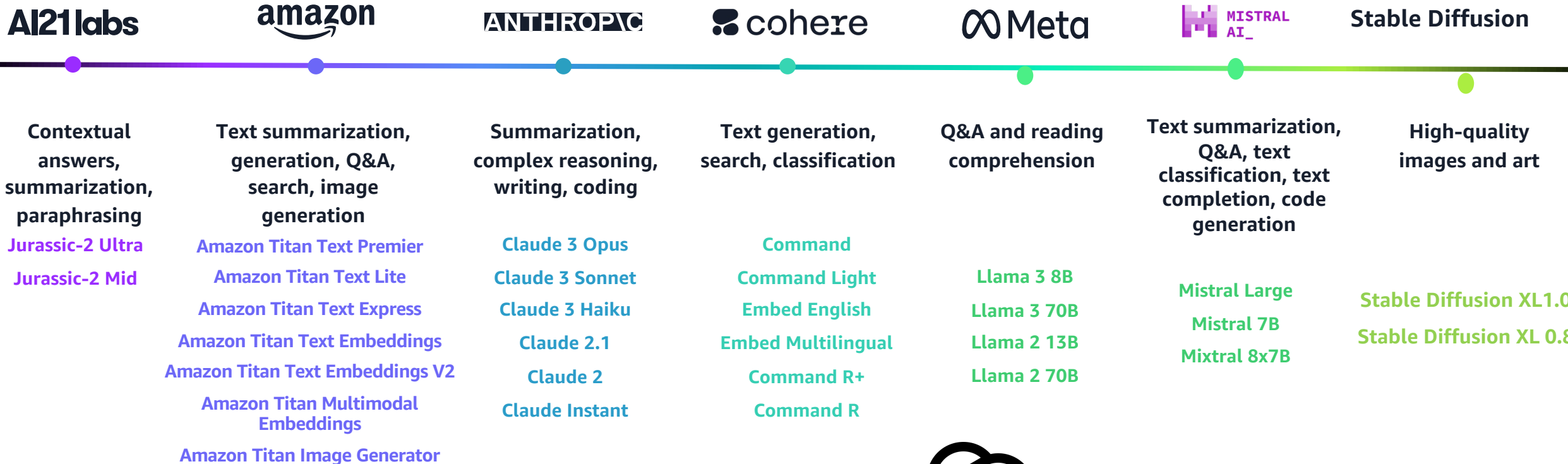
Choice of industry-leading FMs available via a single API

Customize your models using your organization's data

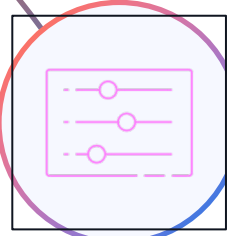
Enterprise-grade security and privacy

Amazon Bedrock

stability.ai



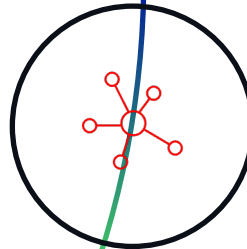
Guardrails for Amazon Bedrock



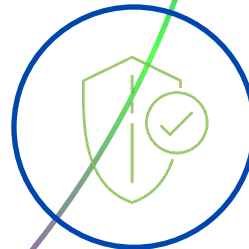
Apply guardrails to multiple foundation models and Agents for Amazon Bedrock



Configure harmful content filtering based on your responsible AI policies



Define and disallow denied topics with short natural language descriptions



Redact sensitive PII information in FM responses

AWS Generative AI Stack

APPLICATIONS TO BOOST PRODUCTIVITY



Amazon Q Business
Amazon Q in QuickSight
INSIGHTS AND AUTOMATION



Amazon Q Developer
SOFTWARE DEVELOPMENT LIFECYCLE

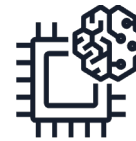
MODELS AND TOOLS TO BUILD GENERATIVE AI APPS



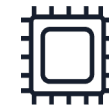
Amazon Bedrock
AMAZON MODELS | PARTNER MODELS

INFRASTRUCTURE TO BUILD AND TRAIN AI MODELS

Amazon SageMaker
MANAGED INFRASTRUCTURE



AWS Trainium
AWS Inferentia



GPUs

HIGH PERFORMANCE COMPUTE

STEP 3 – Your Business Processes



Documents
Web Content



Generative AI that
knows your business
and your customers

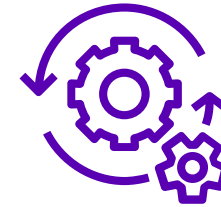
Images generated with Amazon Canvas



Gen AI Agent?



Intelligent,
autonomous
systems



Plan, reason,
and act

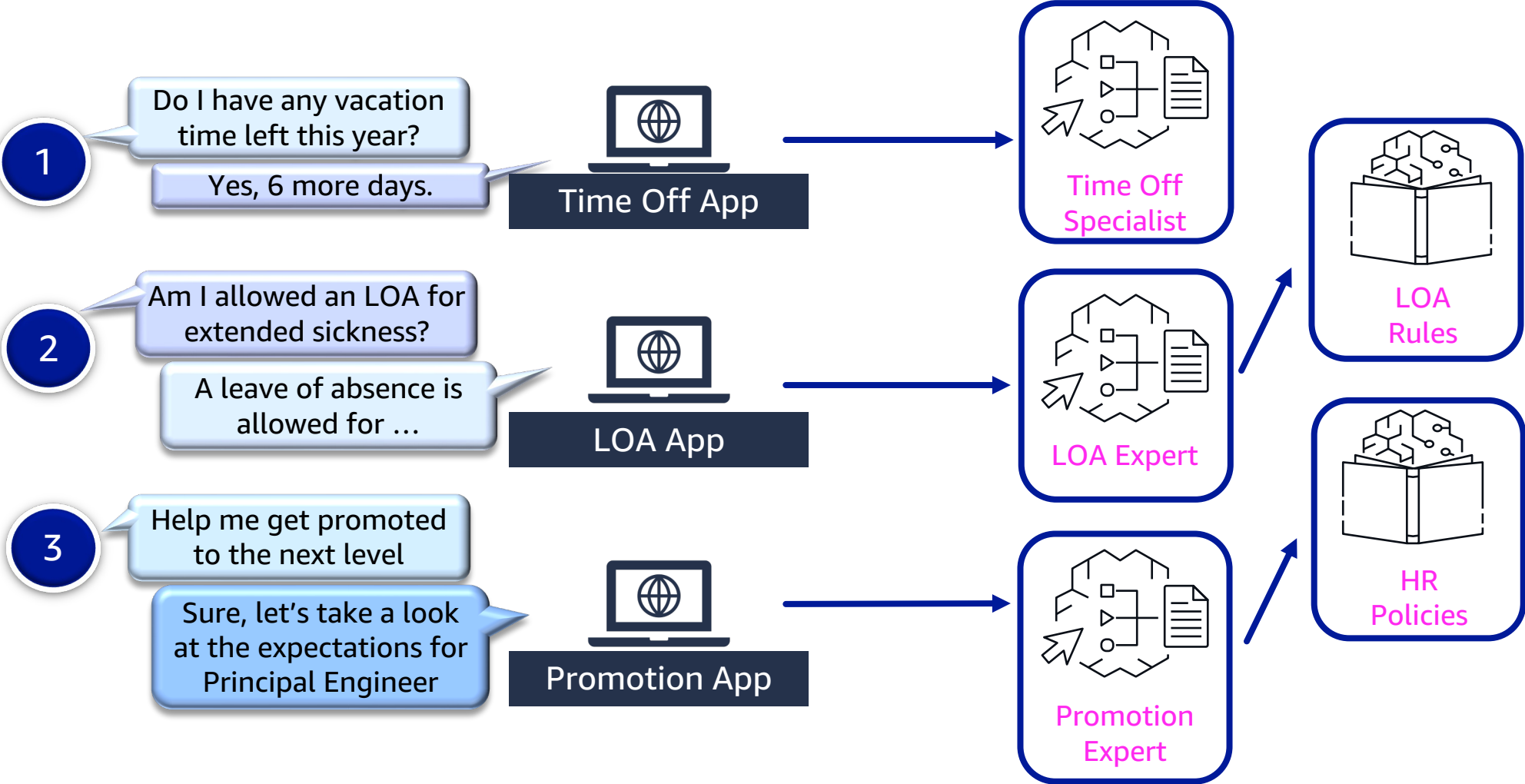


Access to
enterprise data

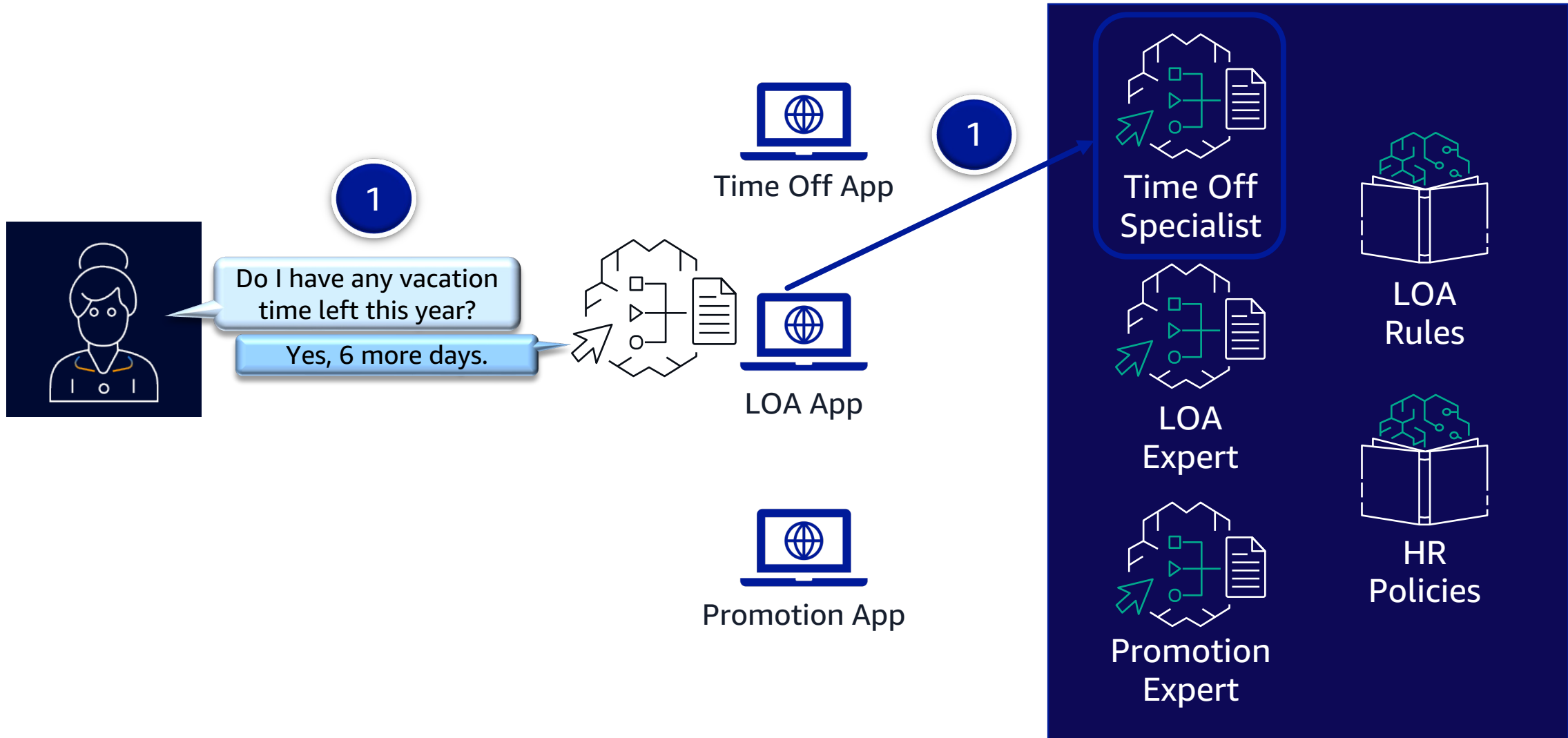


Ability to use
tools

Using multiple agents helps . . .



Unify customer experience



Unify customer experience



2



Am I allowed an LOA for extended sickness?

A leave of absence is allowed for ...



HR Agent as supervisor agent

2



The expert panel is a dark blue vertical rectangle containing several elements:

- Time Off Specialist**: Represented by a brain icon with a play button and a document.
- LOA Expert**: Represented by a brain icon with a play button and a document, highlighted with a pink rounded rectangle.
- Promotion Expert**: Represented by a brain icon with a play button and a document.
- LOA Rules**: Represented by a book icon with a brain inside, highlighted with a pink rounded rectangle.
- HR Policies**: Represented by a book icon with a brain inside.



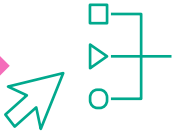
Unify constituent experience



Supervisor provides one-stop shop for customers, with optimized routing and seamless conversation handling

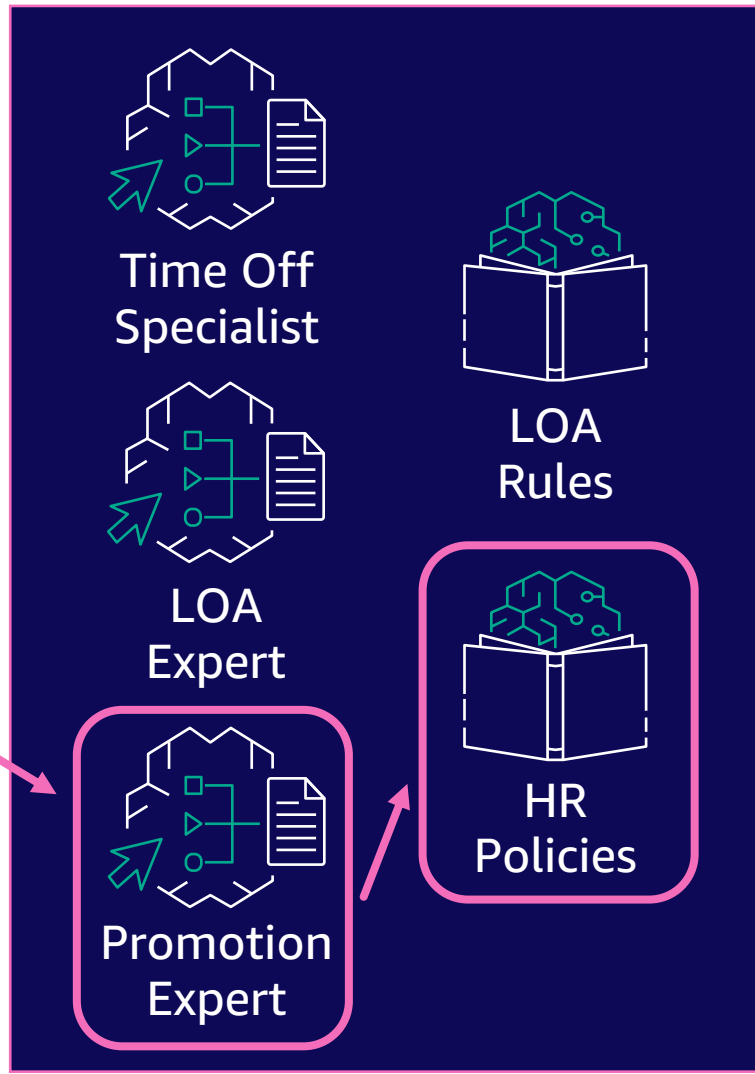


Help me get promoted
One-stop shop
Sure, let's take a look at the expectations for Principal Engineer



HR Agent as supervisor agent

Optimized routing



AI Assisted Financial Aid: Highline College

- Quicker and more transparent way for students to access their information—anywhere and anytime.
- Drastically reduced the manual burden on the financial aid department,
- lowered the number of emails, calls, and visits about an applicant's status by 75%



Amazon Q

DEMO



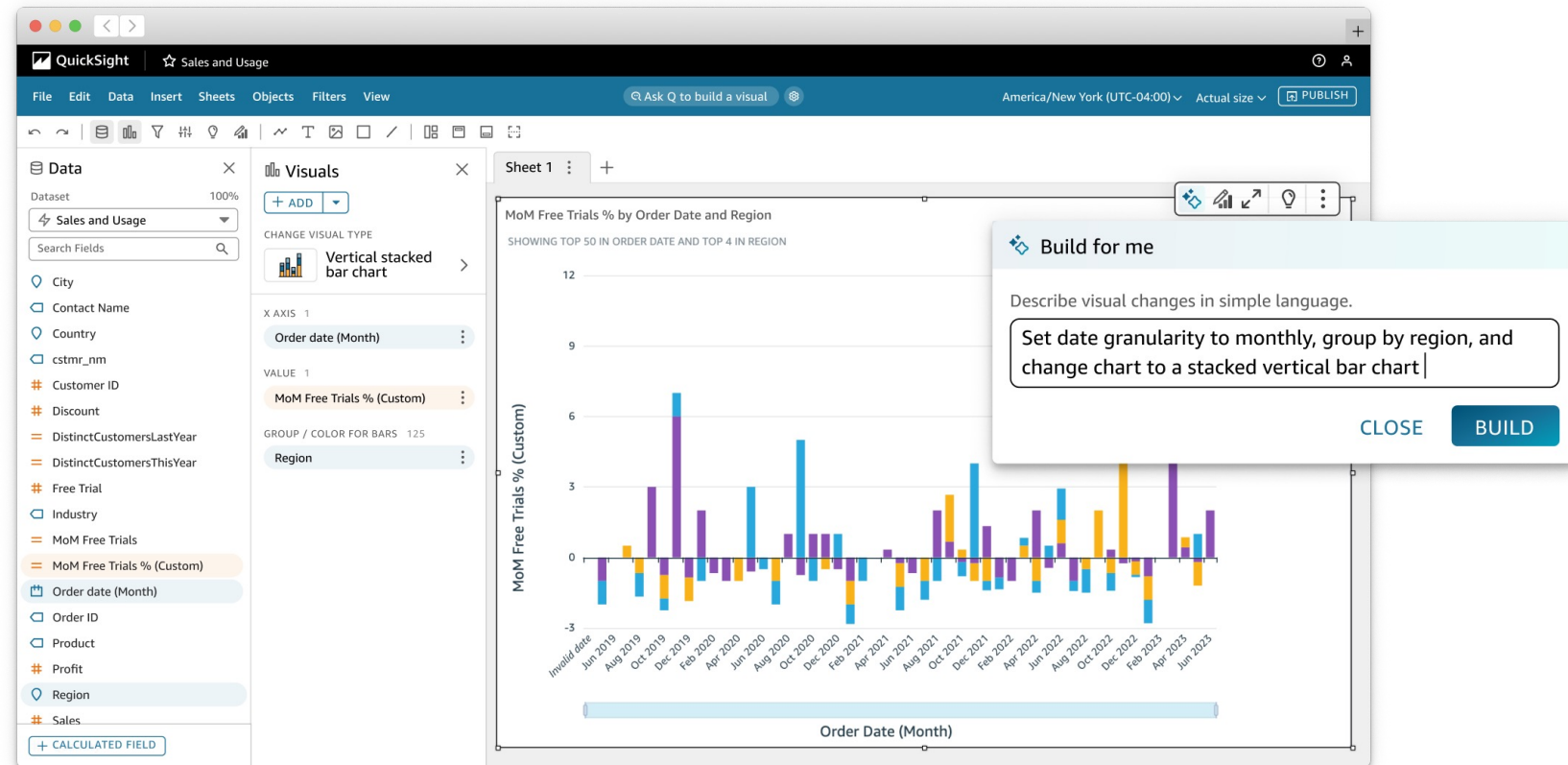
Contra Costa County District Attorney's Office makes unbiased charging decisions with Generative AI Solution on AWS

Automating Sensitive Data Redaction with ScaleCapacity and AWS Generative AI



Visual authoring in QuickSight

Use everyday language to generate and fine-tune visuals in seconds



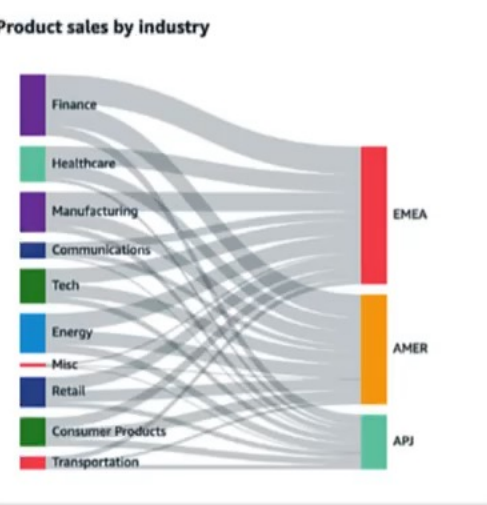
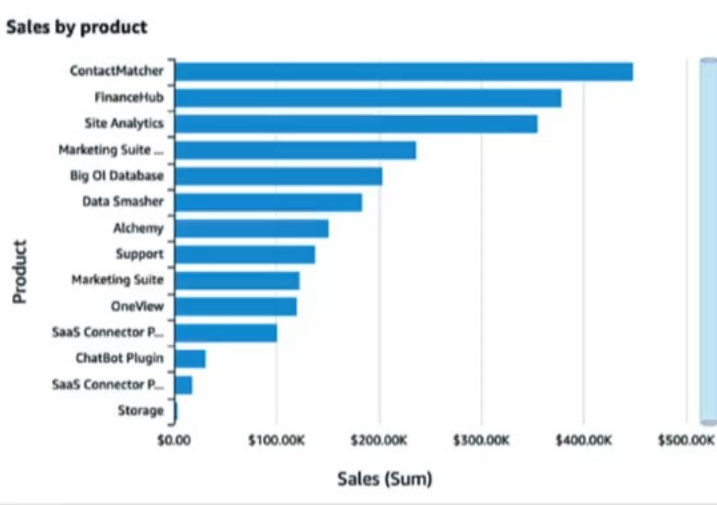
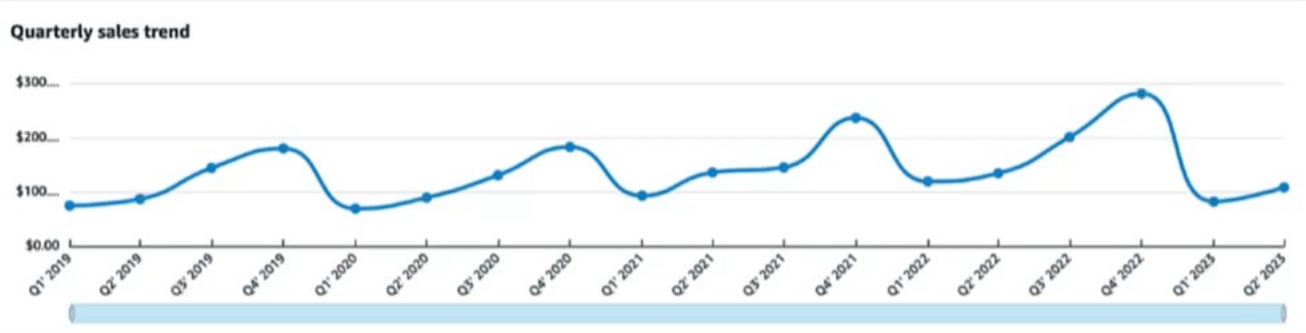


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 - MoM Free Trials %
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 - Sales
- + CALCULATED FIELD

Sheet 1

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The next generation of

Amazon SageMaker



The next generation of

Amazon SageMaker

Collaborate and build faster with a single data and AI development environment

Develop and scale AI use cases with the broadest set of tools

Reduce data silos with an open lakehouse to unify all your data

Meet your enterprise security needs with built-in data and AI governance





Amazon SageMaker

Unified Studio

COMING SOON

COMING SOON

COMING SOON

SQL Analytics

Amazon Redshift

Data Processing

Amazon EMR
AWS Glue
Amazon Athena

Model Development

Amazon SageMaker AI

Gen AI App Development

Amazon Bedrock

Streaming

Amazon MSK
Amazon Kinesis

Business Intelligence

Amazon QuickSight

Search Analytics

Amazon OpenSearch Service

Data & AI Governance

Lakehouse



Data and AI governance

Governance built in to discover, share, and collaborate on data and AI securely

 Amazon SageMaker

 Amazon SageMaker Catalog



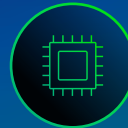
Data



Models



Gen AI



Compute

Built on
Amazon
DataZone

Data & AI Governance

Data
quality

Data
classification

Data & ML
lineage

Permissions and
subscriptions workflows

Amazon Q
generated context

Guardrails

Responsible AI

Auditable –
Cost logging
and Monitoring



Accelerate your impact

Rapid AI prototyping and innovation engagements

Noah Eden

Global Lead, Cloud Innovation Centers
Worldwide Public Sector
Amazon Web Services

Cloud Innovation Centers: Solving public sector challenges

What is a CIC?

Cloud Innovation Centers enable public sector and AWS to **collaborate and solve real-world challenges**, through the collaboration with students and higher education.

Where are the CICs located?



How can CICs help?

Industry-Leading Innovation Processes

Cloud Technology Expertise

Prototype Development

Innovation Events



Innovating together with university students

Public sector organizations bring organizational or mission-related challenges...

We deliver technical proof of concept solutions...



My eCISO

A cybersecurity chatbot to help assess entities' compliance with NIST Cybersecurity Framework



ScopeBuilder

Uses LLMs to build high quality scopes of work for campus procurement



Educational Simulation Tool

Helps pharmacy students practice in real-world patient interactions



PDF Accessibility Project

“ With the introduction of new accessibility standards, AI and machine learning offer what may be the most viable path to success, given our resources and scope.

Cory Tressler

Assistant Dean for Technology and Digital Programs

The Ohio State University Libraries

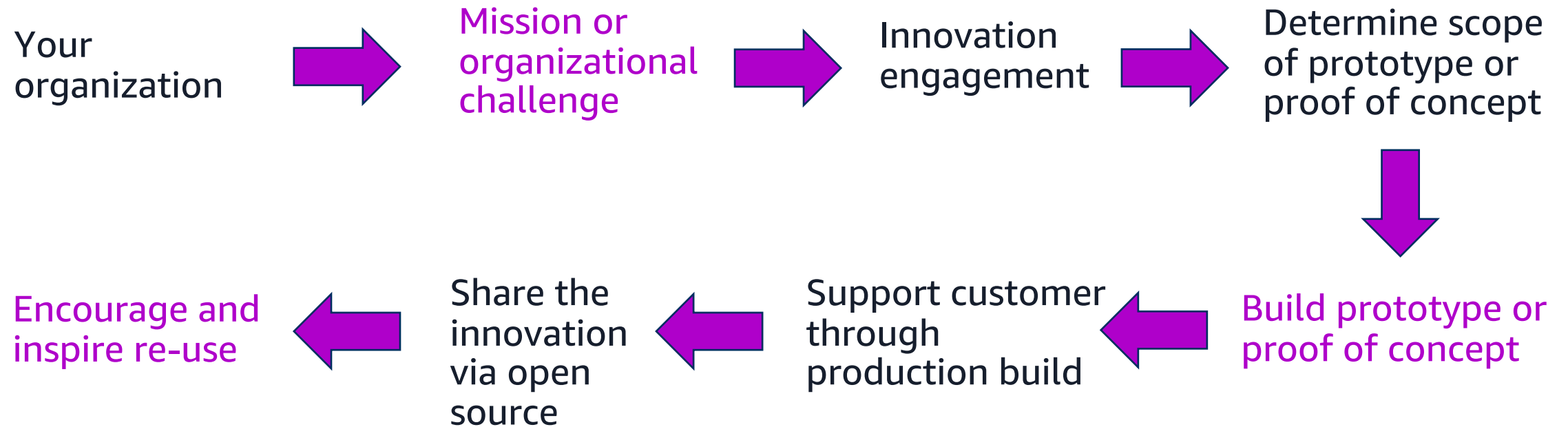


THE OHIO STATE
UNIVERSITY

UNIVERSITY LIBRARIES



Engagement lifecycle



What is your top innovation priority?

- ...to more easily communicate with constituents?
- ...to index your websites and enable smarter, multi-lingual search?
- ...to quickly analyze or aggregate thousands of paper records?
- ...to enable citizens to access the resources and guidance they need?
- ...to improve graduation rates via support of faculty?

Or something else entirely?

Let's innovate and build together.





Thank you!

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Global Lead, Cloud Innovation Centers
Worldwide Public Sector
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**Please complete the survey
for this session**



AI/ML track

Practical AI for
Public Sector