



Innovation & Transformation Programs

Generative AI with AWS

Innovate, transform, empower, optimize

Tassaluck [Pom] Kaewzaikird

Business Lead, Education and Research

Introduction to AWS

History of AWS

amazon

aws



200+

SERVICES

Broad and Deep Functionality

TECHNICAL & BUSINESS SUPPORT

MARKETPLACE

ANALYTICS

DEV OPS

MOBILE SERVICES

IoT

MACHINE LEARNING

ENTERPRISE APPS

HYPRID ARCHITECTURE

MIGRATION

APP SERVICES

INFRASTRUCTURE

CORE SERVICES

SECURITY &
COMPLIANCE

MANAGEMENT TOOLS



AWS Thailand Region is Live!



The new AWS Asia Pacific (Thailand) Region will enable customers with data residency requirements to securely store data in Thailand while providing even lower latency across the country. They be able to leverage AWS technologies like artificial intelligence and machine learning, data analytics, and Internet of Things.



What is Generative AI?



So what is

Generative

AI?

Generative AI (Gen AI) is a subset of Deep Learning that involves training a model to generate new data that is similar to the training data it was given. This type of AI can be used to create art, music, text and even entire virtual worlds, among other applications.



Artificial Intelligence

Artificial Intelligence

AI is the theory and development of systems embedded in an environment, that sense, make decisions, and act to achieve a specific purpose.



Machine Learning

Machine Learning

A subfield of AI focused on building systems that automatically improve their performance over time and through experience.



Deep Learning

Deep Learning

A type of ML technique based on artificial neural networks in which multiple layers of processing are used to extract progressively higher-level features from data.



Generative AI

Generative AI

Algorithms that use a large amount of data and large pre-trained models to generate new content:

- Written: text, code
- Visual: images, videos
- Auditory: audio

Used by
Data
Scientists

Accessible
to
developers
and end
users

Question: What is generative AI?

- Creates new content and ideas, including conversations (synthesized research, instructions, advice), stories, images, videos, and music
- Can augment human creativity, drive innovation, and provide a contextual synthesis of varied types of information.
- Powered by large (language) models that are pretrained on vast corpora of data and commonly referred to as foundation models (FMs)

AI

MACHINE
LEARNING

SIMPLE

INPUTS



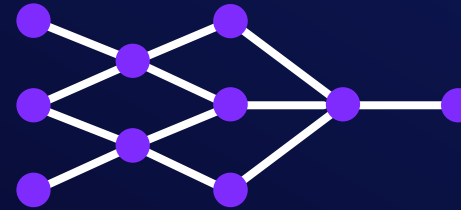
SIMPLE

OUTPUTS

DEEP
LEARNING

COMPLEX

INPUTS



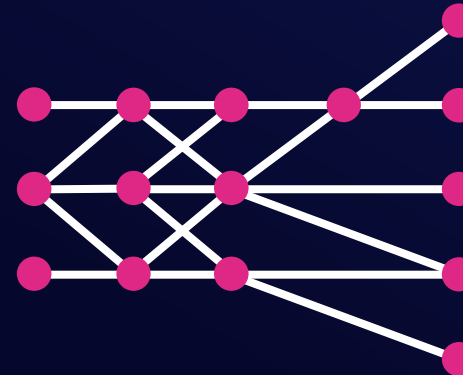
SIMPLE

OUTPUTS

FOUNDATION
MODELS

COMPLEX

INPUTS



COMPLEX

OUTPUTS



Transforming your business with Generative AI



NEW EXPERIENCES

Create new innovative and engaging ways of interacting with your customers and employees



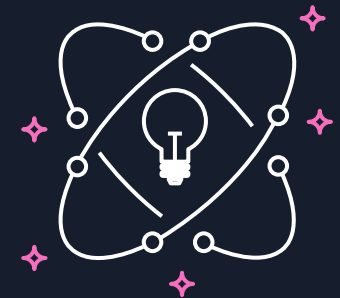
PRODUCTIVITY

Radically improve productivity across all lines of business



INSIGHTS

Extract insights and clear answers from all your corporate information, enabling faster and better decisions



CREATIVITY

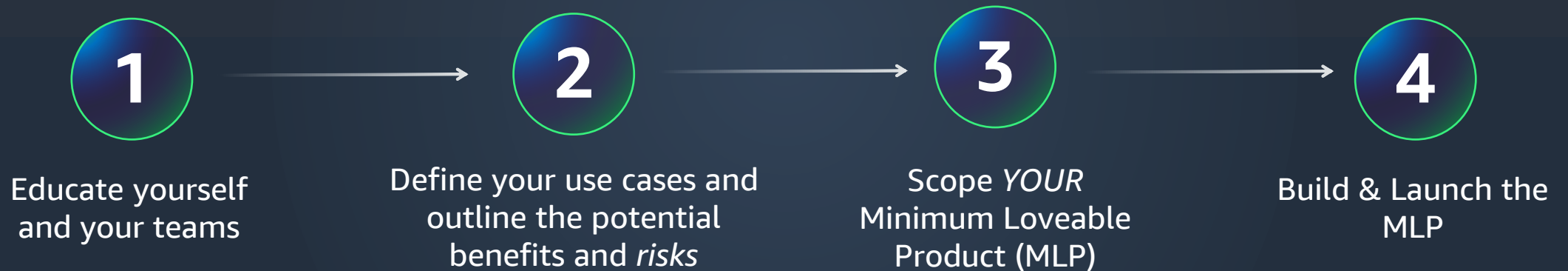
Create new content and ideas, including conversations, stories, images, videos, and music

Innovate and Transform with AWS



Starting your generative AI journey

Your generative AI journey starts with educating yourself and your teams



How can AWS support your journey?

Learn about Amazon's approach...

Learning from Amazon – AI/ML at Amazon.com

Learn about Amazon.com's
AI/ML strategy

*Discover how generative AI could
create value in your business...*

Driving Business Outcomes with Generative AI

Identify opportunities across
the business

Working Backwards

Work backwards from the
customer to to define solutions

Get hands on...

AWS Services

Amazon CodeWhisperer
Amazon Bedrock Amazon
Amazon SageMaker JumpStart

AWS Build Programs

Prototyping
GenAI Incubator
ML Labs
AWS Partners

...



Learning from Amazon – AI/ML at Amazon.com

AMAZON + AI/ML = BETTER CUSTOMER EXPERIENCE



Automation

Better, cheaper, and faster



Augmentation

Smarter, more convenient



Enrichment

New features/services



Invention

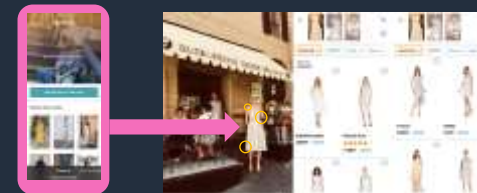
New products and categories



Supply Chain automation
and operations



Personalized Amazon Video
recommendation



“Style Snap” – find that
style in the picture



No check out lines. Ever.

Driving business outcomes with Generative AI

We start with the customer and prioritize business and customer outcomes. We establish an understanding of the business opportunity and desired outcomes then work backwards from the end-customer to outline a solution.

Our programmatic approach acts as a point of orchestration at the center of business, people, and technology to rapidly scope the Minimum Loveable Product (MLP) and establish an action plan to take the customer from concept to implementation.





Innovation & Transformation Programs

Generative AI Use Cases on AWS

Generative AI capabilities and use case examples

Generative AI capabilities



Generation



Question
answering



Summarization



Translation



Correction



Classification

Use case examples

- Extract insights from your documents
- Create a product description
- Create a personalized banner
- Create a job posting
- Summarize your meetings
- Create an ad from a product description
- Explain complex data in plain English
- Easily draft documents, emails, or design.



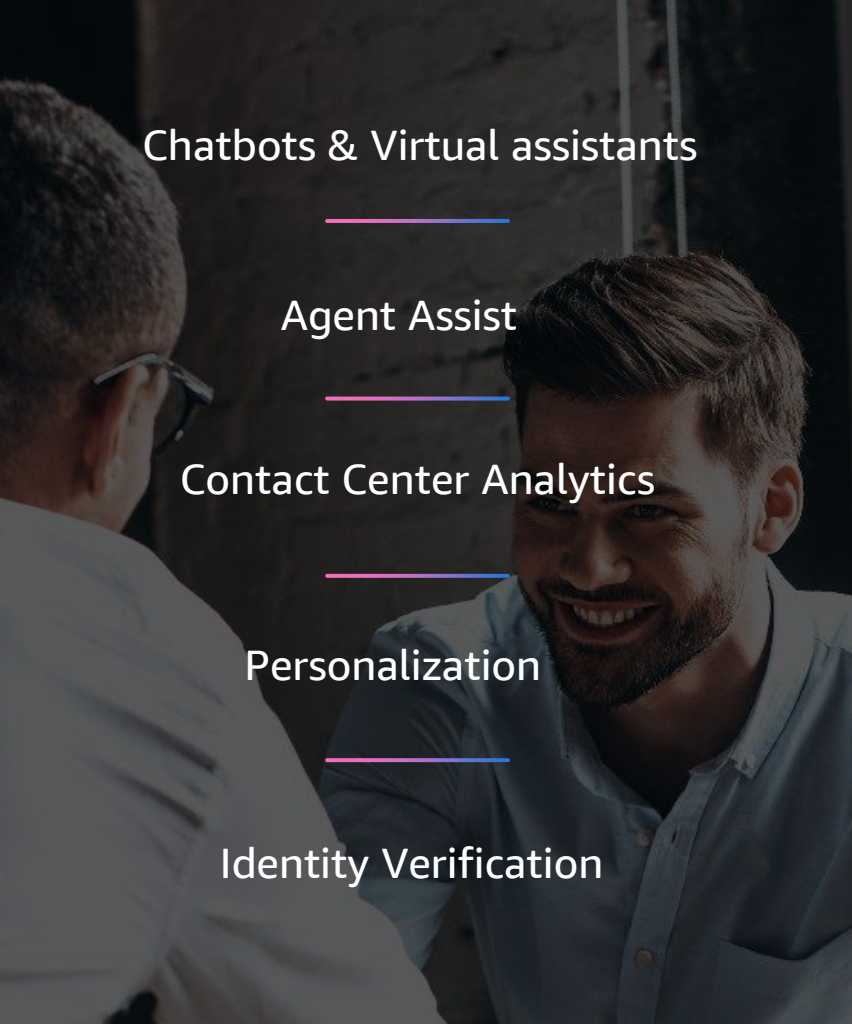
**Enhance customer
experience**



**Boost employee
productivity**



**Improve business
operations**



Chatbots & Virtual assistants

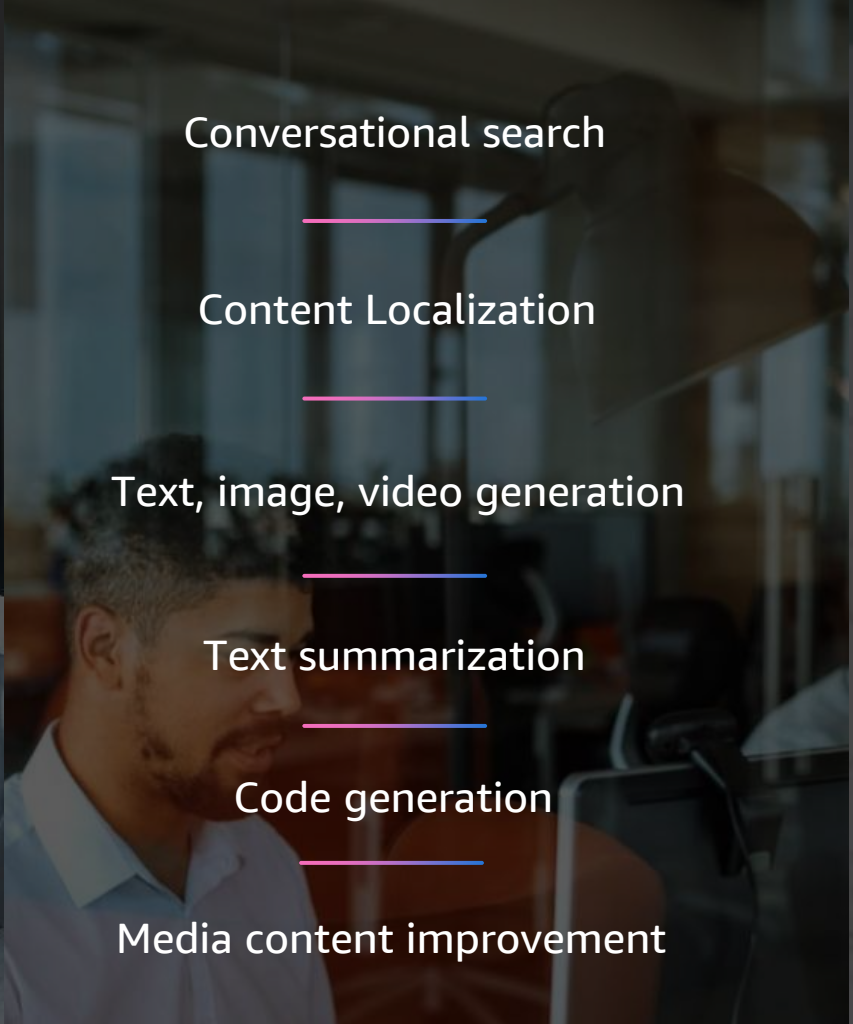
Agent Assist

Contact Center Analytics

Personalization

Identity Verification

**Enhance customer
experience**



Conversational search

Content Localization

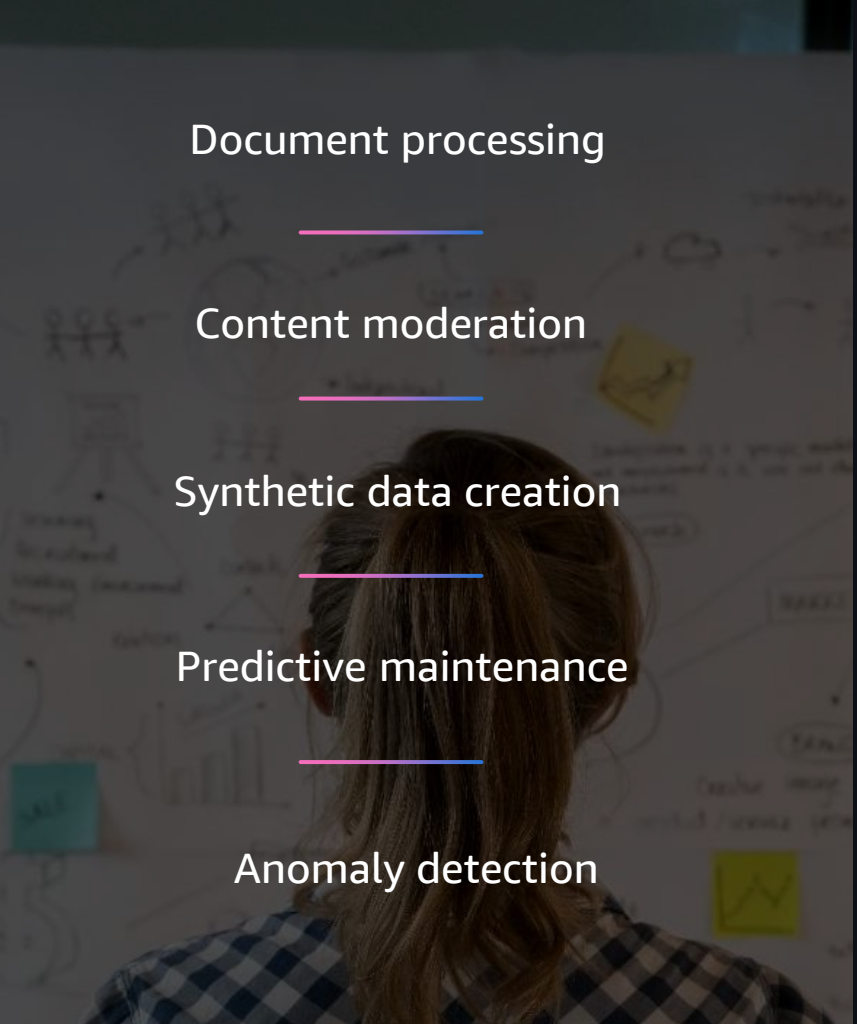
Text, image, video generation

Text summarization

Code generation

Media content improvement

**Boost employee
productivity**



Document processing

Content moderation

Synthetic data creation

Predictive maintenance

Anomaly detection

**Improve business
operations**



**Healthcare &
life sciences**



**Industrial &
manufacturing**



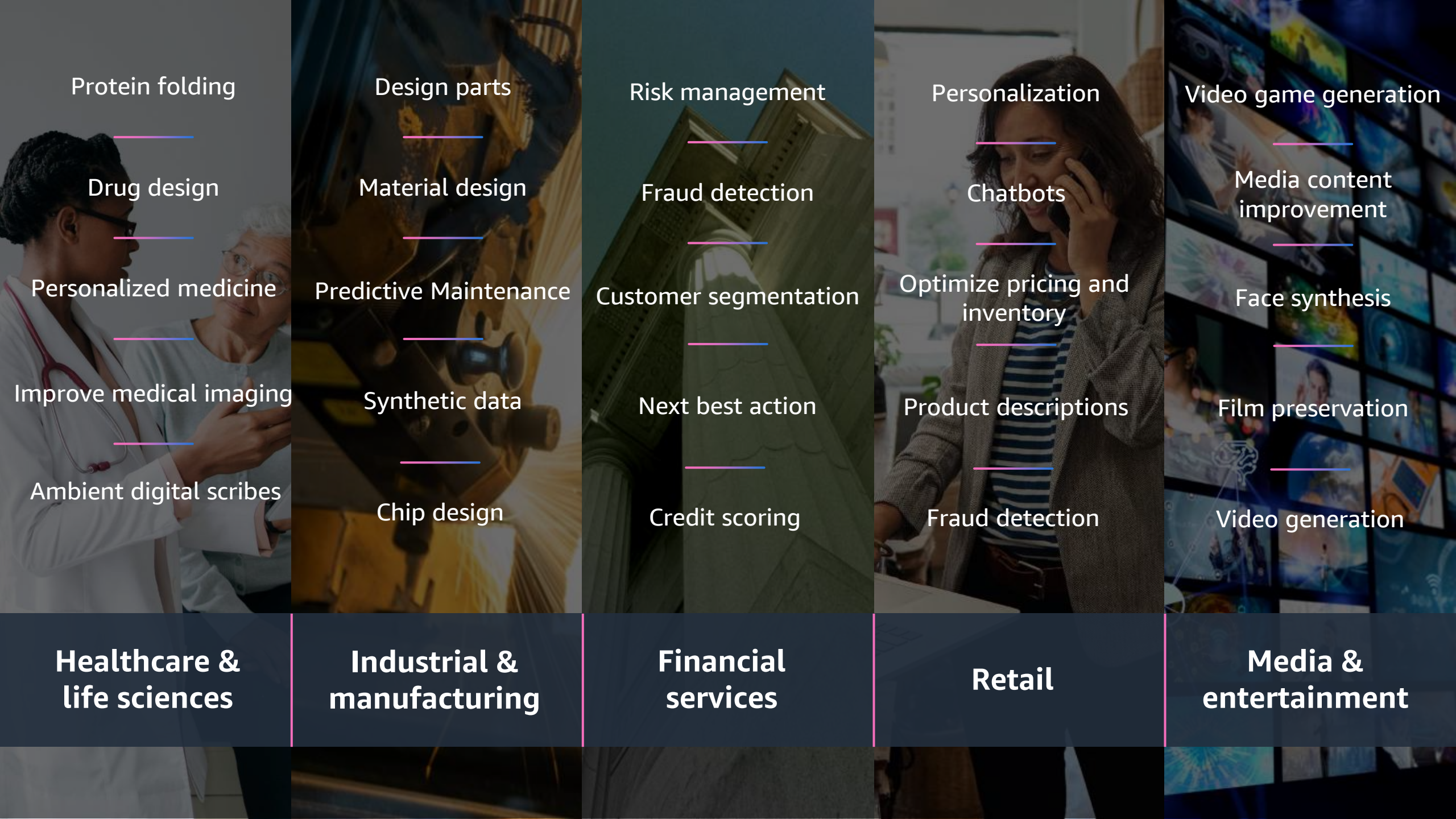
**Financial
services**



Retail



**Media &
entertainment**



Protein folding

Drug design

Personalized medicine

Improve medical imaging

Ambient digital scribes

**Healthcare &
life sciences**

Design parts

Material design

Predictive Maintenance

Synthetic data

Chip design

**Industrial &
manufacturing**

Risk management

Fraud detection

Customer segmentation

Next best action

Credit scoring

**Financial
services**

Personalization

Chatbots

Optimize pricing and
inventory

Product descriptions

Fraud detection

Retail

Video game generation

Media content
improvement

Face synthesis

Film preservation

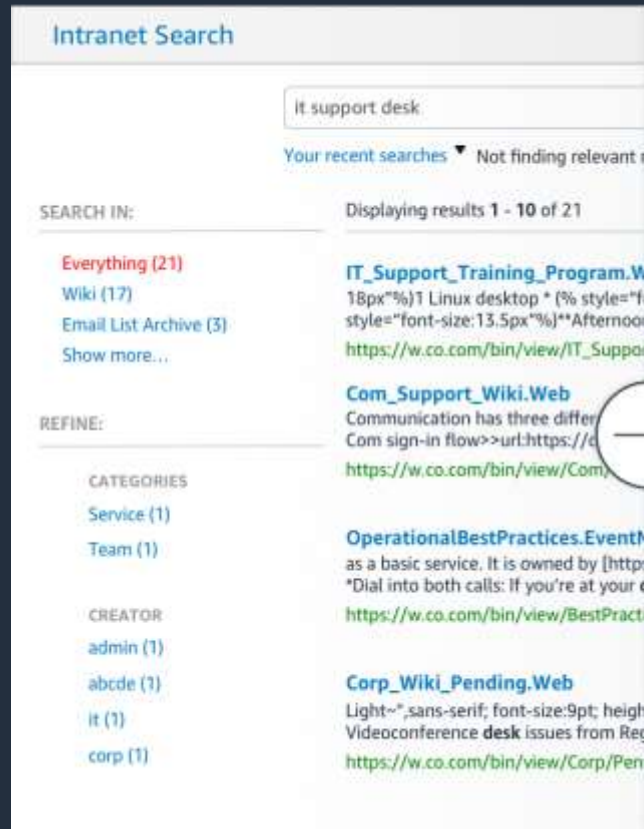
Video generation

**Media &
entertainment**

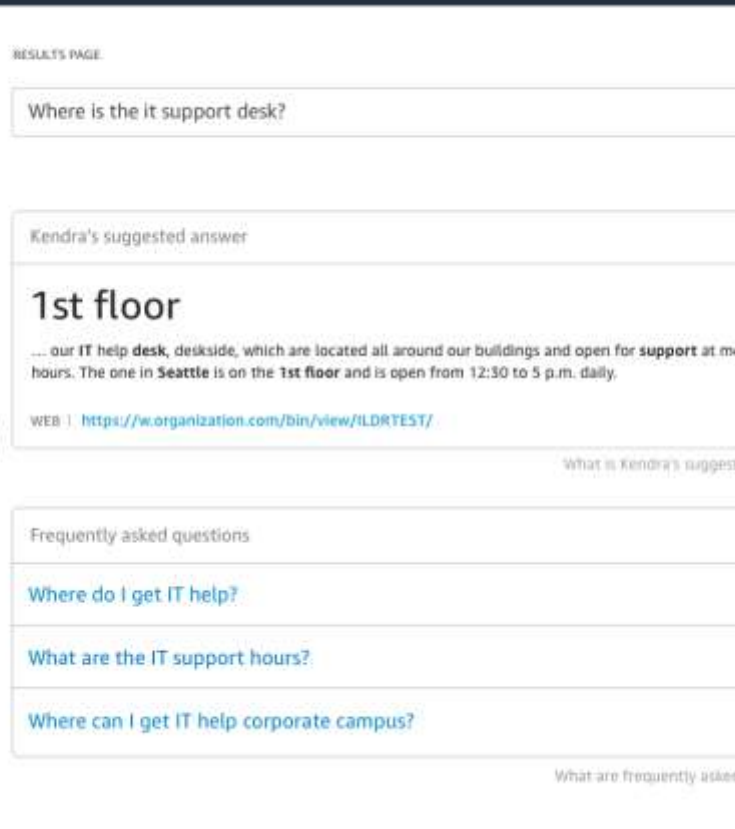
A person's hands are shown typing on a laptop keyboard. The image is overlaid with several semi-transparent, white-outlined icons of documents or folders, which appear to be floating in the air around the hands and the laptop. The background is a blurred office setting with warm lighting.

Boost employee productivity
Conversational search

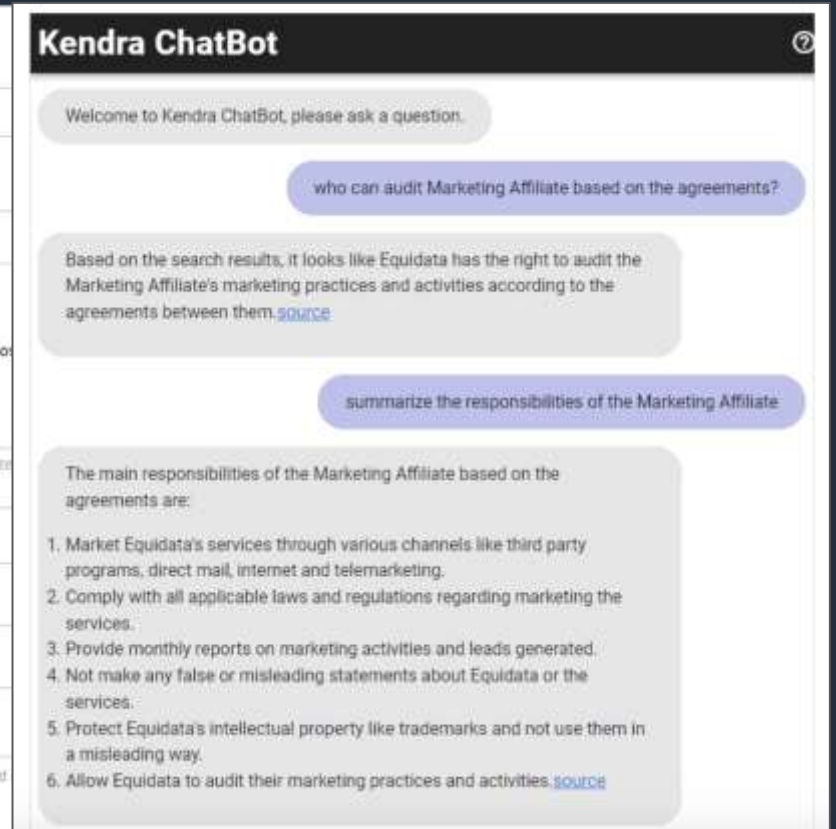
From search results to insights



Traditional search



Intelligent search



Conversational search

Top use cases



Customer experiences

Agent Assist
Self-service chatbots
Website search



Enterprise search

Intranet search
Domain-focused search
(R&D, Compliance, HR, Legal, etc.)

Scenario examples

Employee experience

Employee onboarding

I want to know about the medical benefits available to me?

Product innovation

Who are the competitors for product ABC?

HR helpdesk

What expenses are reimbursable for my HSA?

Customer support experience

Agent-assisted support

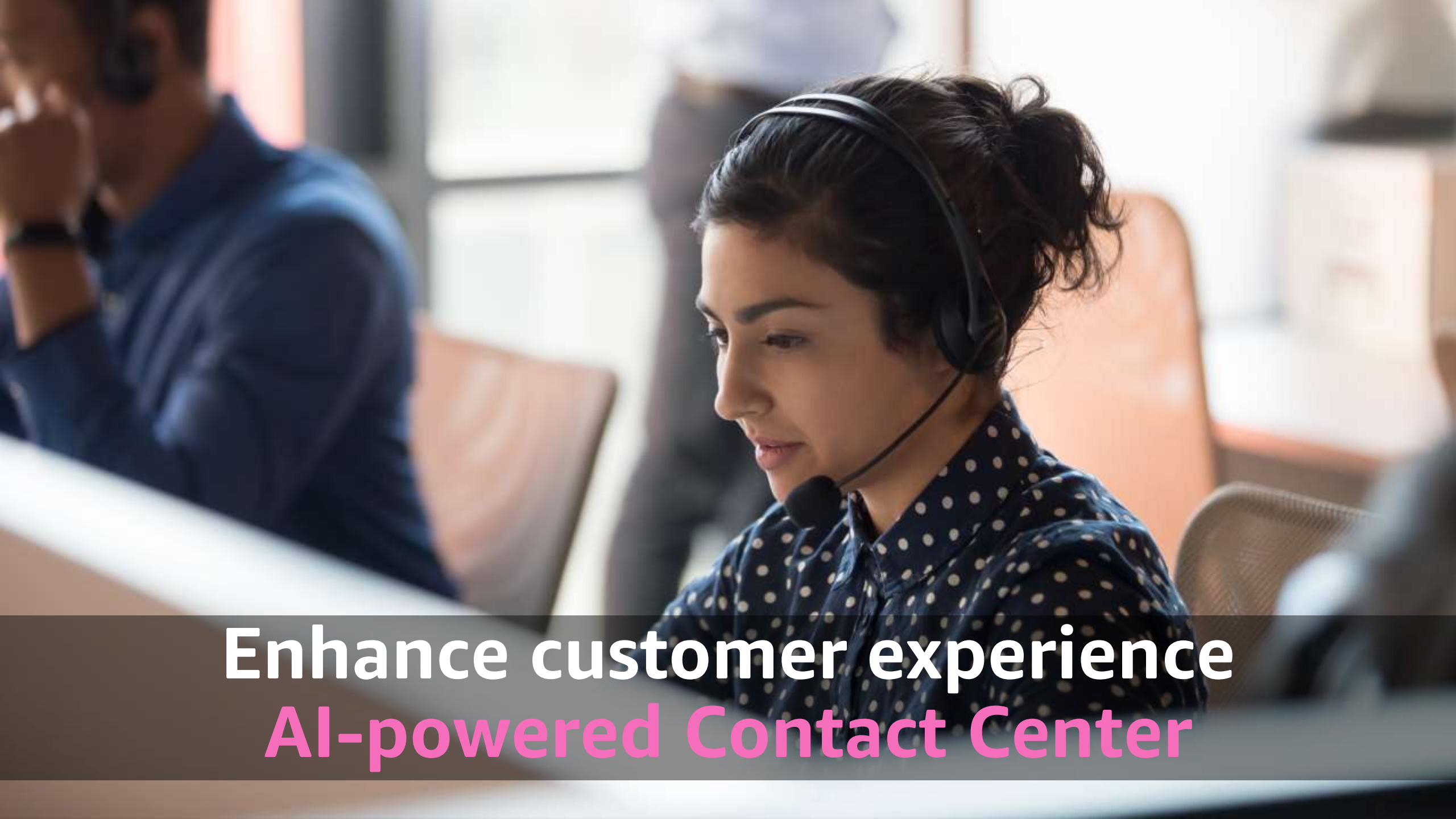
What are the SLAs for Premium Support?

Customer self-service

Tell me about the new product release?

New customer onboarding

How do I set up a new admin role for my team?

A woman with dark hair tied back, wearing a black headset with a microphone, is seated at a desk in a call center. She is looking down and to the left, focused on her work. She is wearing a dark blue shirt with white polka dots. In the background, another person is visible, also wearing a headset, working at a desk. The setting is a modern office with large windows in the background.

Enhance customer experience
AI-powered Contact Center

Contact Center Intelligence (CCI) solutions

ADDRESSING 3 PRIMARY USE CASES IN CONTACT CENTERS WITH AI AND AUTOMATION



Self-service virtual agent

Use of automatic speech recognition (ASR) and natural language understanding (NLU) to resolve customer queries with automated responses



Agent assist

Use real-time transcription, natural language processing (NLP) and translation to improve productivity with automation and coaching



Real-time & Post Call analytics

Use offline and real-time audio streaming transcription and NLP to derive actionable insights into customer conversations and agent performance



CAN I
HELP YOU ?

Enhance customer experience

Chatbots and Virtual Agents

Self-service scenarios

Within contact center



Use of automatic speech recognition (ASR) and natural language understanding (NLU) via Amazon Lex and other AI services to resolve customer queries with automated responses

Across standalone apps or platforms



Building and deploying Q&A, FAQ and other types of chatbots with Amazon Lex, Amazon Kendra and other AI services to increase personalization and improve customer engagement and satisfaction

A person in a light blue shirt is seated at a desk, working. Their right hand is on a black calculator, and their left hand is holding a pen over a document. To the right of the person is a large, tall stack of papers and documents, some of which are in blue folders. The scene is brightly lit, suggesting an office environment. A semi-transparent dark grey banner is overlaid at the bottom of the image, containing the text.

Improve business operations
Intelligent Document Processing

Legacy document processes do not meet today's needs



Legacy OCR and manual processes are time-consuming, error-prone, and expensive



Manual processes do not scale easily with document volume



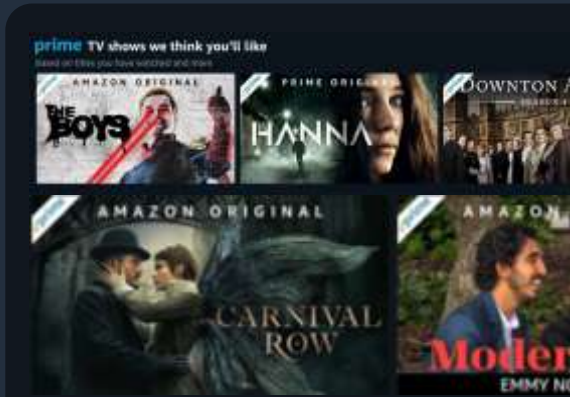
Difficult to find useful information needed for business decisions

Faster document processing shortens decision cycles; this enables you to serve more customers and have people do higher value tasks



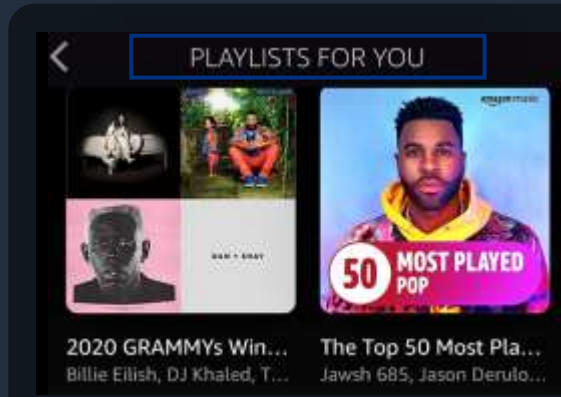
Enhance customer experience
Personalization

Top Amazon Personalize use cases



User personalization

Recommendations tailored to a user's profile and interests



Personalized ranking

Items re-ranked in a category or search response based on user preference or history



Similar items

Recommend similar items to encourage exploration and upsell



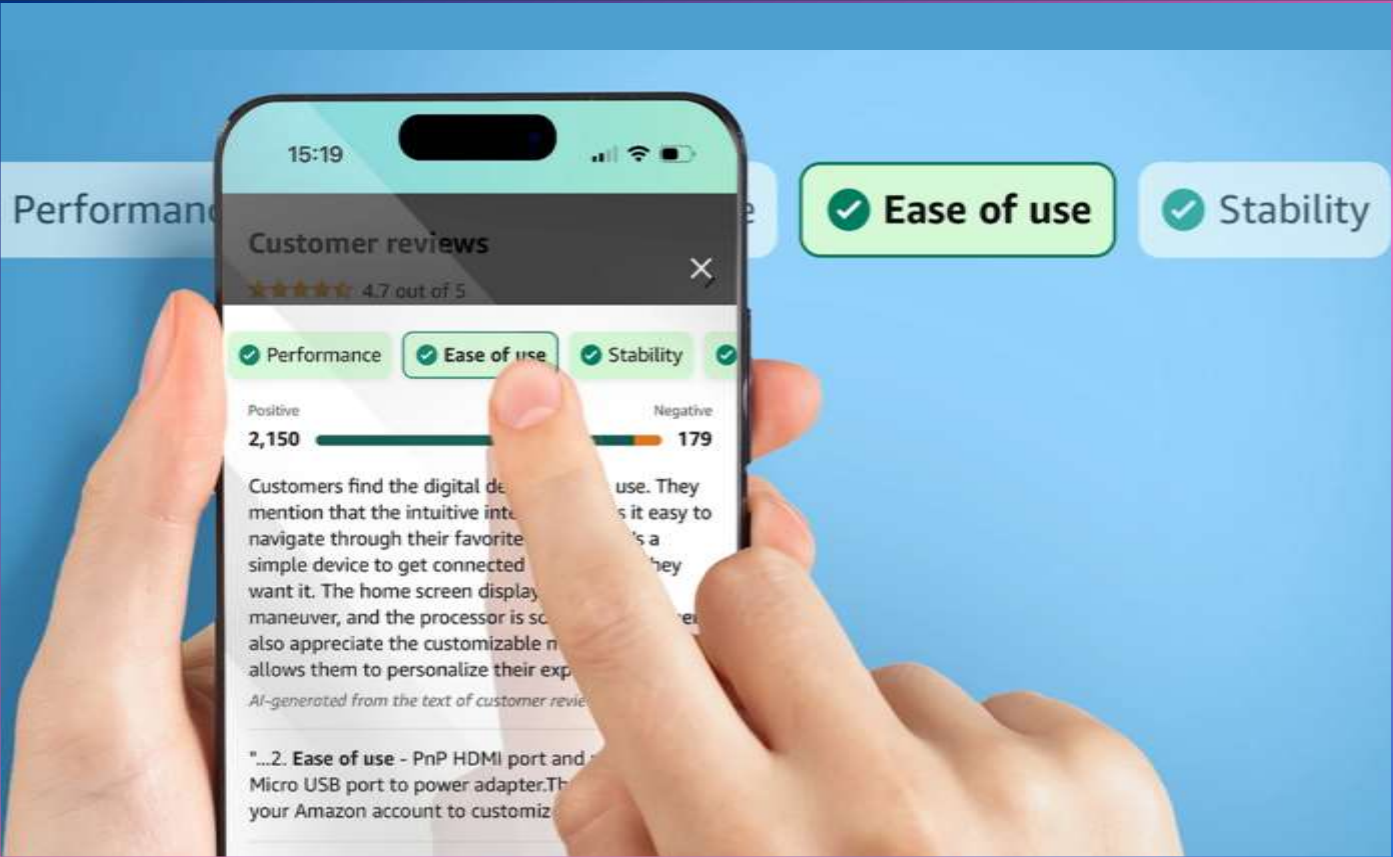
User segmentation

Target messaging to the users most interested in an item or category

Generative AI at Amazon.com

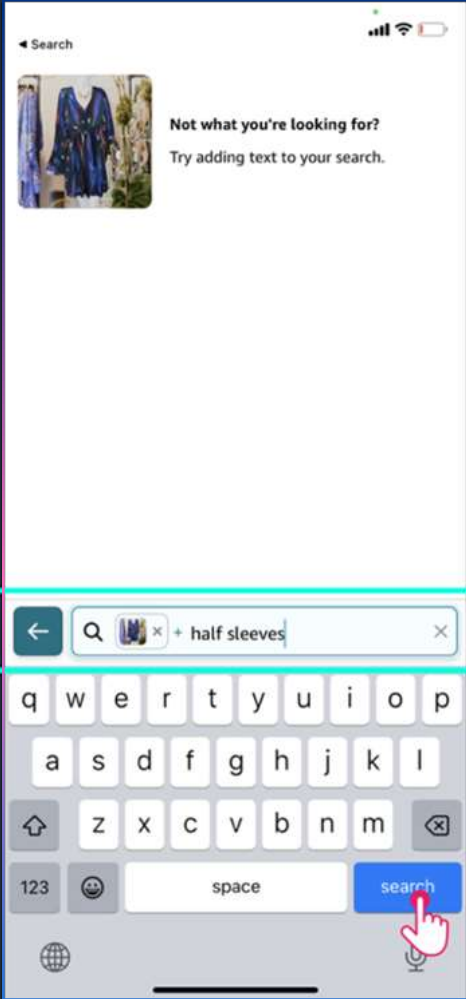
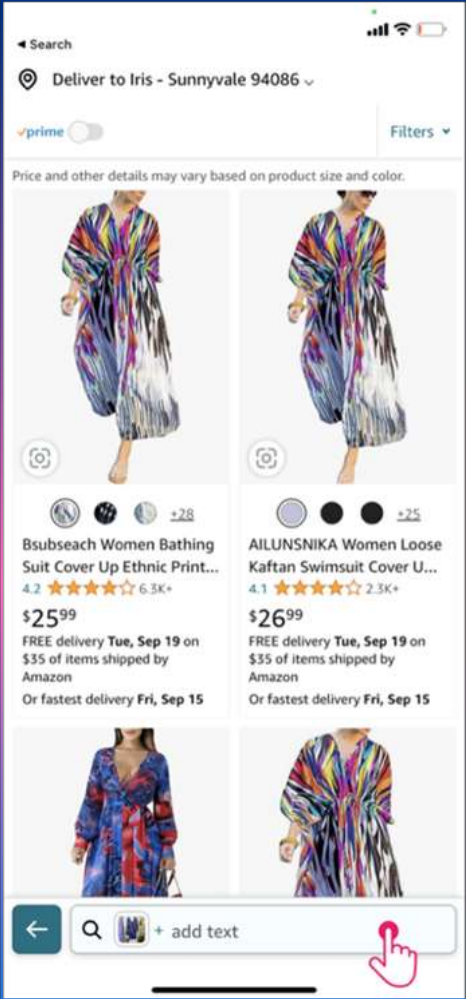
PRODUCT SUMMARY GENERATION

How Amazon continues to improve the customer reviews experience with generative AI



Empowering searches for consumers

MULTI-MODAL SEARCH



Example

Blue sneakers without laces

Result 1

10 results

1

Not applicable

?



text: N
o Tie
Shoelac
es -

2

Not applicable

?



text: S
hoe
Laces
No Tie

3

Not applicable

?



text: S
hoe
Laces
No Tie

4

Not applicable

?



text: S
hoe
Laces
No Tie

Result 2

10 results

1

Not applicable

?



text_description: C
apelli New York
Toddlers Unisex
Slip On Sneaker

2

Not applicable

?



text_description: T
esla Men's Ultra
Lightweight Running
Shoes L510 PR2

3

Not applicable

?



text_description: C
rocs Men's Norlin
Canvas Slip-on
Upper: Canvas

4

Not applicable

?



text_description: B
ed Stu Men's
Bluegill Slip-On
Loafer Slip on

Retail marketing **hyper-personalization**

LG 77" Class C3 Series OLED evo 4K UHD Smart webOS TV

The epitome of luxury viewing

From \$2,199.99



Indulge in the epitome of luxury viewing with the LG 77" Class C3 Series OLED evo 4K UHD Smart webOS TV.

This masterpiece boasts an aluminum frame and a breathtaking 77-inch OLED display, delivering unparalleled picture quality with vibrant colors and deep blacks.

With cutting-edge technologies like Dolby Vision, HDR 10, and a 120Hz refresh rate, you'll be immersed in cinematic brilliance, while the webOS 23 smart platform seamlessly integrates with Amazon Alexa, Google Assistant, and Apple HomeKit.

Experience ultimate sound quality with AI Sound Pro and Clear Voice Pro.

Priced at \$2,199.99, this LG TV is a true investment in your entertainment experience.

[Find out more](#)

Dolby Vision
Enhances your viewing experience with superior picture quality

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From \$2,199.99



沉浸在极致奢华的观影体验中,与LG 77英寸C3系列OLED evo 4K UHD智能webOS电视相伴。

这款杰作采用铝制机身,配备77英寸令人叹为观止的OLED显示屏,呈现出出色的画质、鲜艳的色彩和深邃的黑色。

凭借Dolby Vision、HDR 10和120Hz刷新率等尖端技术,您将沉浸在电影般的绚丽画面中,而webOS 23智能平台与Amazon Alexa、Google Assistant和Apple HomeKit无缝集成。

通过AI Sound Pro和Clear Voice Pro体验终极音质。

这款LG电视售价2199.99美元,是您投资娱乐体验的不二之选。

[Find out more](#)

Dolby Vision
Enhances your viewing experience with superior picture quality

LG 77" Class C3 Series OLED evo 4K UHD Smart webOS TV

สุดยอดประสบการณ์ชมที่หรูหราล้ำสมัย

From \$2,199.99



สวัสดีคุณ วิดสัน

ยินดีต้อนรับสู่จักรวาลของความบันเทิงสุดหรู กับทีวี LG 77 นิ้ว รุ่น C3 Series OLED evo 4K UHD Smart webOS

ผลงานชิ้นเอกนี้ประดับด้วยกรอบอลูมิเนียมสวยงาม และจอแสดงผล OLED ขนาด 77 นิ้วอสังการ ส่งมอบคุณภาพภาพระดับเยี่ยมยอด พร้อมสีสดใสและดำเข้มลึก

ด้วยเทคโนโลยีล้ำสมัยอย่าง Dolby Vision, HDR 10 และอัตราการรีเฟรชหน้าจอ 120Hz คุณจะได้จมต้งอยู่ในประสบการณ์ภาพยนตร์อันน่าทึ่ง ขณะที่ระบบปฏิบัติการ webOS 23 สามารถเชื่อมต่อกับ Amazon Alexa, Google Assistant และ Apple HomeKit ได้อย่างราบรื่น

สัมผัสคุณภาพเสียงระดับเยี่ยมกับ AI Sound Pro และ Clear Voice Pro

ในราคา 2,199.99 เหรียญสหรัฐ ทีวี LG เครื่องนี้คือการลงทุนที่คุ้มค่าสำหรับประสบการณ์บันเทิงของคุณ

[Find out more](#)





Booking.com



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Personalize use cases powered by generative AI

CREATE NEW WAYS TO INTERACT WITH CUSTOMERS WITH A PERSONAL TOUCH



- Add ML-based recommendations to chatbots or AI-generated marketing content to increase engagement
- Generate engaging human readable descriptions of recommended products to delight customers
- Summarize recommended content like News or research for new ways to connect with users

A person wearing a light blue button-down shirt is shown from the chest down, sitting at a desk and typing on a laptop. The laptop is dark-colored. Above the keyboard, there are three translucent blue rectangular planes, each containing a white line-art icon of a document with lines of text. The background is a soft, out-of-focus blue. At the bottom of the image, there is a dark blue horizontal band containing white and pink text.

Creativity & Content Creation

Text, image, video generation

Text generation

Transcript Summarization

Extract the main point of a conversation

Generate Content Summarization

Input

Summarize this dialogue:

Customer: Please connect me with a support agent.
AI: Hi there, how can I assist you today?
Customer: I forgot my password and lost access to the email affiliated to my account. Can you please help me?
AI: Yes of course. First I'll need to confirm your identity and then I can connect you with one of our support agents.
TLDR: A customer lost access to their account.

Summarize this dialogue:

AI: Hi there, how can I assist you today?
Customer: I want to book a product demo.

Response

A customer wants to get more information about pricing.

Summarization

Applications include:

- Summaries of scripts and other content
- Use of summaries for EPGs
- Call center transcripts

Academic article

Information overload occurs when decision-makers face a level of information that is greater than their information processing capacity. In an early high information text (Schneider et al. 1987; Tupper and Mangan 2004) but the phenomenon is not confined to the modern world. As Blair (2002) noted in her review article, even in the nineteenth century, writers complained of 'the too ingenuities of the feeling of worried which are all with us today. The multitude of books, the shortage of time, and the absence of memory' (Blair 2002, p. 1).

Technological innovation supported the rapid increase in the availability of information and the decrease in information search-related costs. Gutenberg's printing press and the rise of information technology (IT) before the industrial revolution. The issue of information overload was limited to a wealthy and privileged elite. In particular, the rise of IT and the use of information services have resulted in an expansion of information overload-related problems for all socioeconomic, academic and medical firms, the number of information overload-related problems suggested.

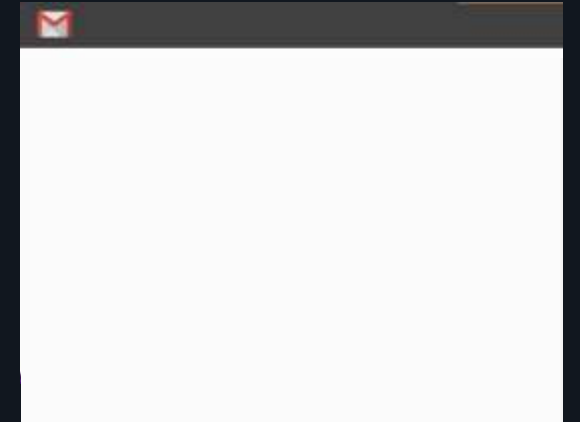
Academic article

Information overload occurs when decision-makers face a level of information greater than their ability to process. The phenomenon dates back to medieval times, but 3 innovations rapidly accelerated it: Gutenberg's printing and the rise of information technology.

Reading assistance

Applications include:

- Point by point summaries
- Toxicity detection
- Comprehension e.g., translate legalese



Writing assistance

Applications include:

- Rephrase lines of dialog and other written content
- Write short blogs, product descriptions, news items, emails etc.

Text generation use cases

Marketing

Product descriptions

Marketing and sales copies

Create an ad from a product description

Create copy for a web page, blog, or article

Legal

Summarization and translation of legal documents (e.g., contracts, patent applications)

HR

Create job postings

Help create interview questions for candidate assessment

Financial Services

Real time market insights from financial market data

M&E

Video script generation

Converting sports data into news

Education

Help create new teaching materials, essay prompts, quiz questions

Pharma

Create a report from clinical trial data

Productivity

Compose emails

Draft common documents

Rewrite content for a different audience

Image transformation & generation: overview



Generated by Stable Diffusion 2.0



Image transformation



4x
→



Upscaling

Super Resolution and Content Restoration

Motivation: Many companies have vast back catalogs of low res content. Upscaling and restoration gives older content new opportunities to be seen.

Old Method: Uses mathematical interpolation, which tends to overly smooth out detail.

New Method: Foundation models; much better fidelity to detail.

Content Restoration: similar methods can remediate dirt and scratch, color issues.



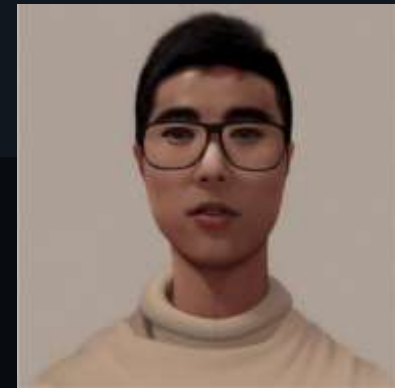
Transforming Image Content: Personalized Avatars



*"Young **James**, cute and adorable cartoon trending on ArtStation"*



*"Portrait of **James**, ... Van Gogh style"*



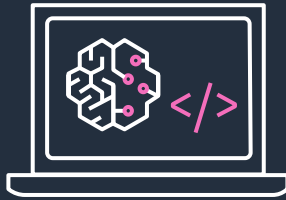
Method: fine-tune Stable Diffusion in SageMaker using 10 -12 images

A man and a woman are working together on a computer in a dimly lit room. The man, wearing a blue shirt and a cap, is pointing at the screen while the woman, wearing a blue denim shirt, looks on with a smile. The computer monitor displays a web application interface with various panels and a color palette. The background is dark with some ambient lighting from a lamp and a bookshelf.

Boost employee productivity
Code generation

Amazon CodeWhisperer

BUILD APPLICATIONS FASTER AND MORE SECURELY WITH AN AI CODING COMPANION



Generate code
suggestions in real time



Scan code for hard-to-
find vulnerabilities



Flag code that resembles
open-source training
data or filter by default

CodeWhisperer

BUILD APPLICATIONS QUICKLY WITH YOUR AI CODING COMPANION



Code generation



AND

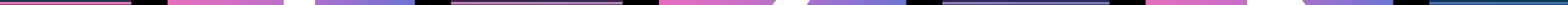
Go, Rust, PHP, Ruby, Kotlin, C, C++,
Shell scripting, SQL, and Scala



AND

CLion, GoLand, WebStorm, Rider,
PhpStorm, RubyMine, and DataGrip

Start your generative AI journey today



1

Deploy Amazon
CodeWhisperer for immediate
productivity gains

2

Explore FMs through
Amazon Bedrock

3

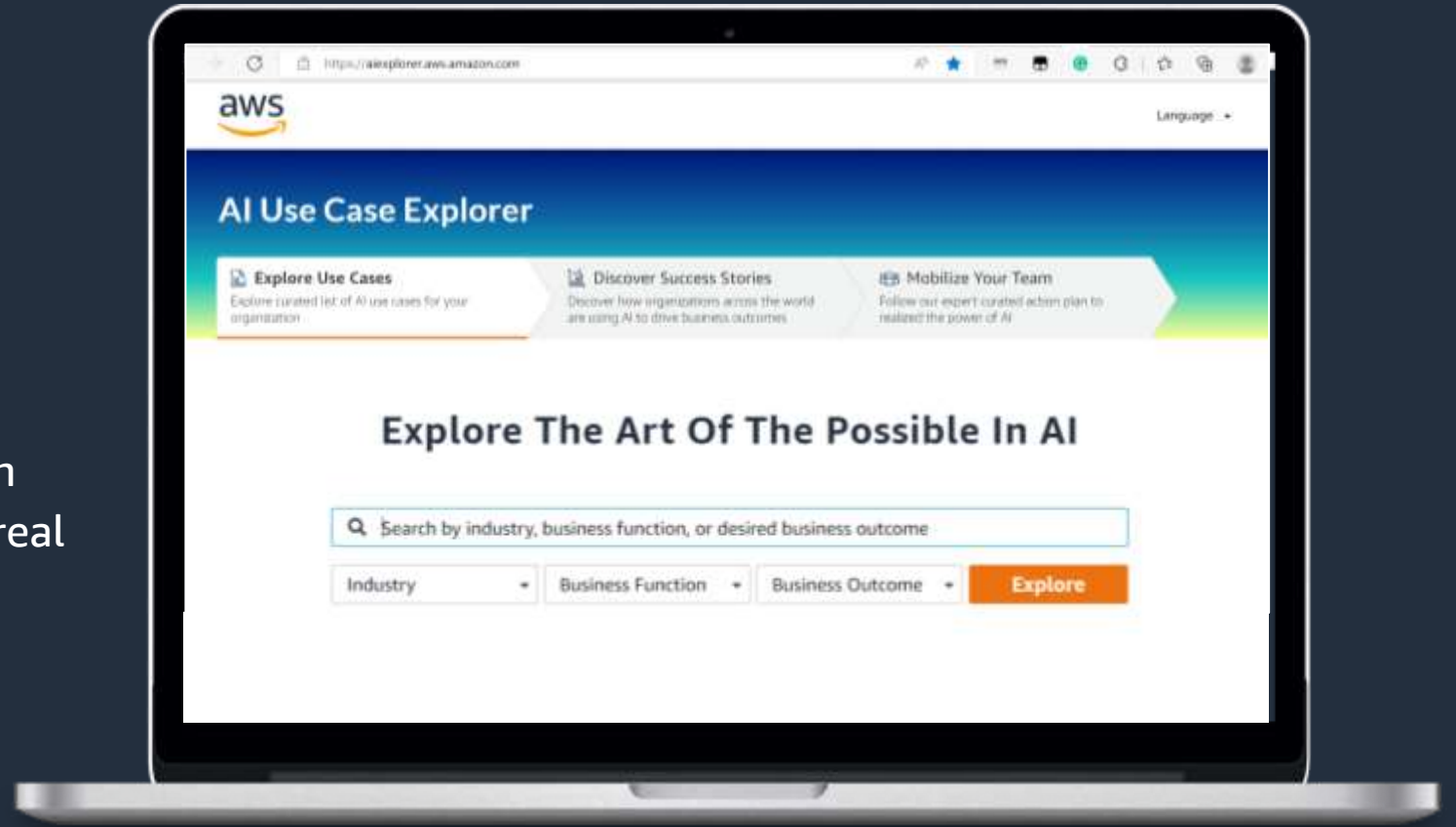
Get started on a PoC for
your top use cases





AI Use Case Explorer

Easily find the most relevant AI use cases with related content and guidance to make them real



aiexplorer.aws.amazon.com



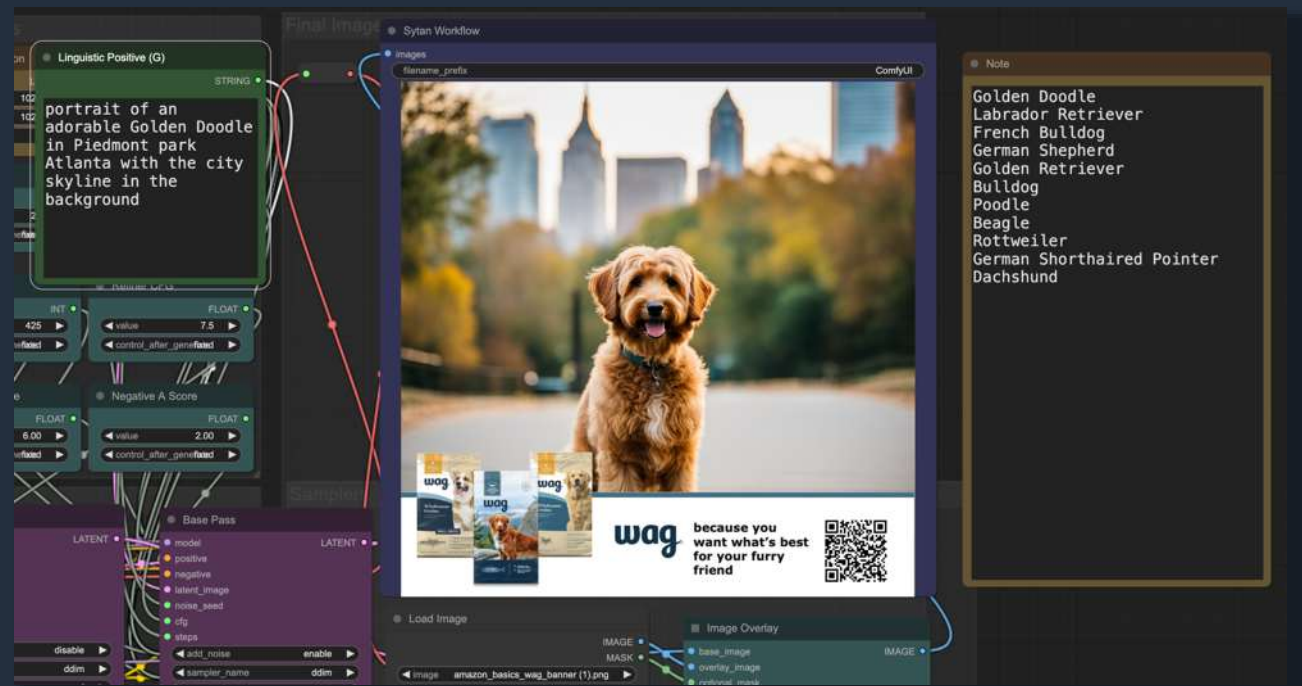
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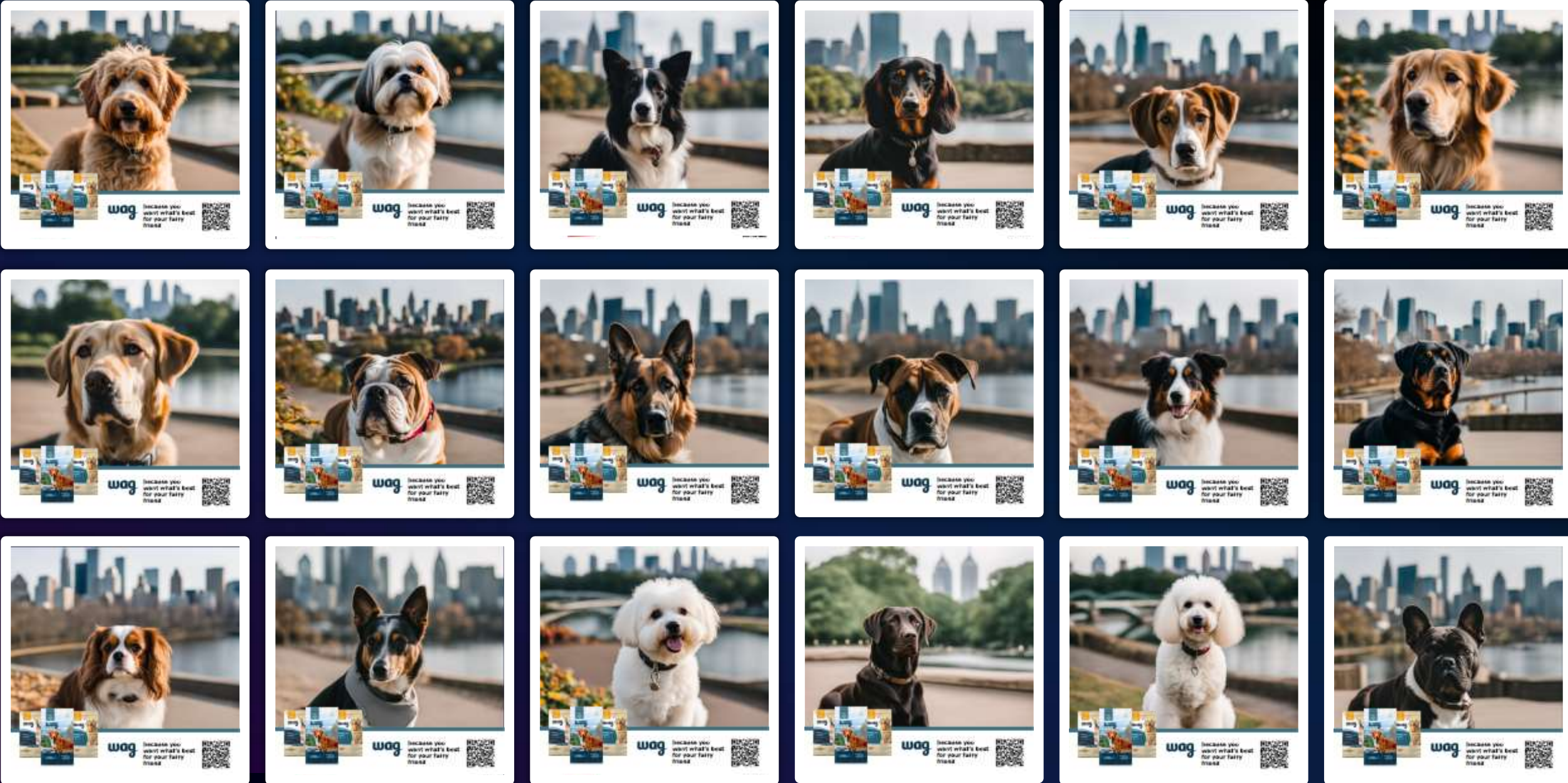
Generative Ads

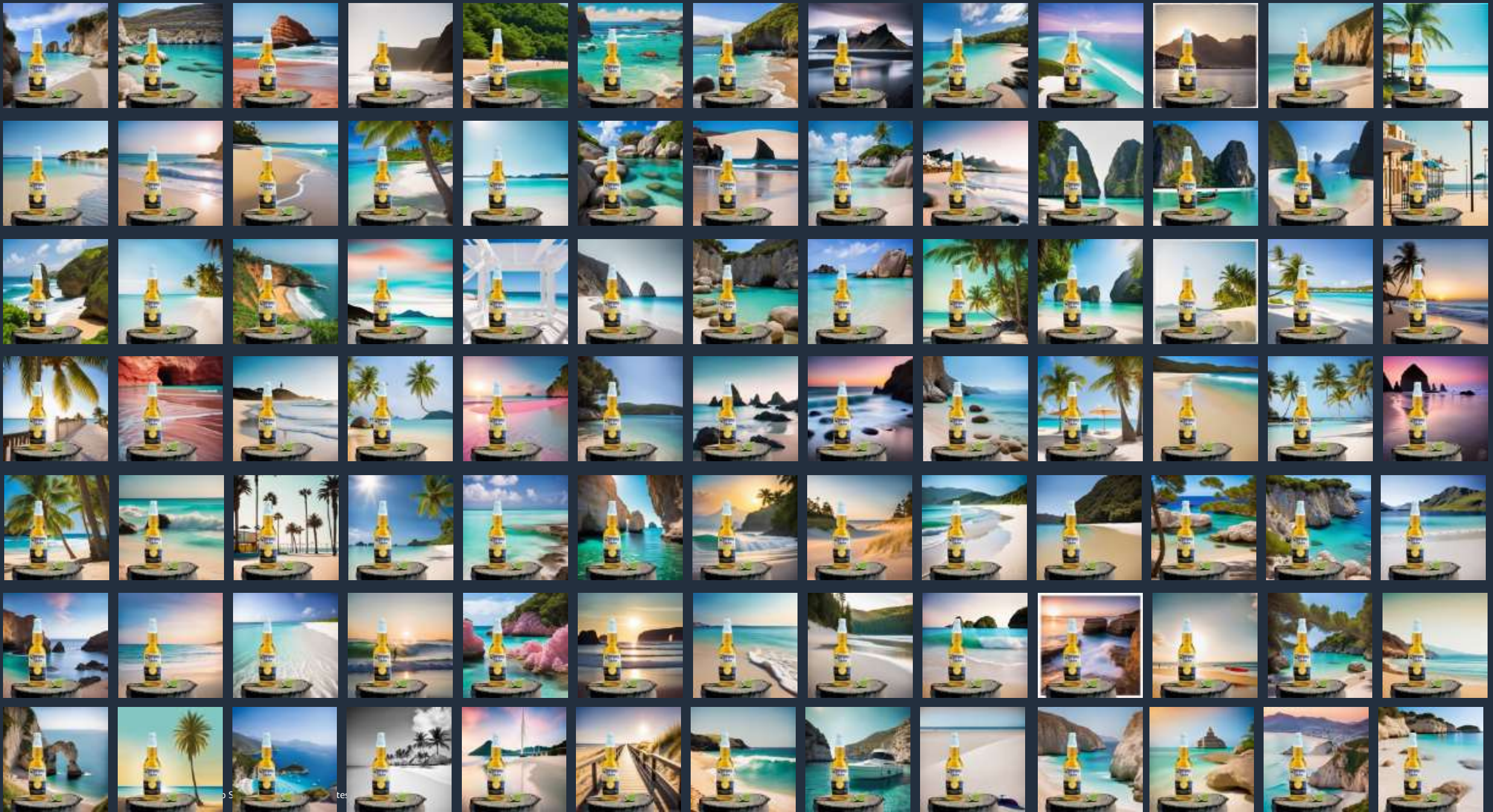
– Breed x Age x City x Park x Language x Time of Year

Portrait of an adorable Golden Doodle in Piedmont park Atlanta with the city skyline in the background



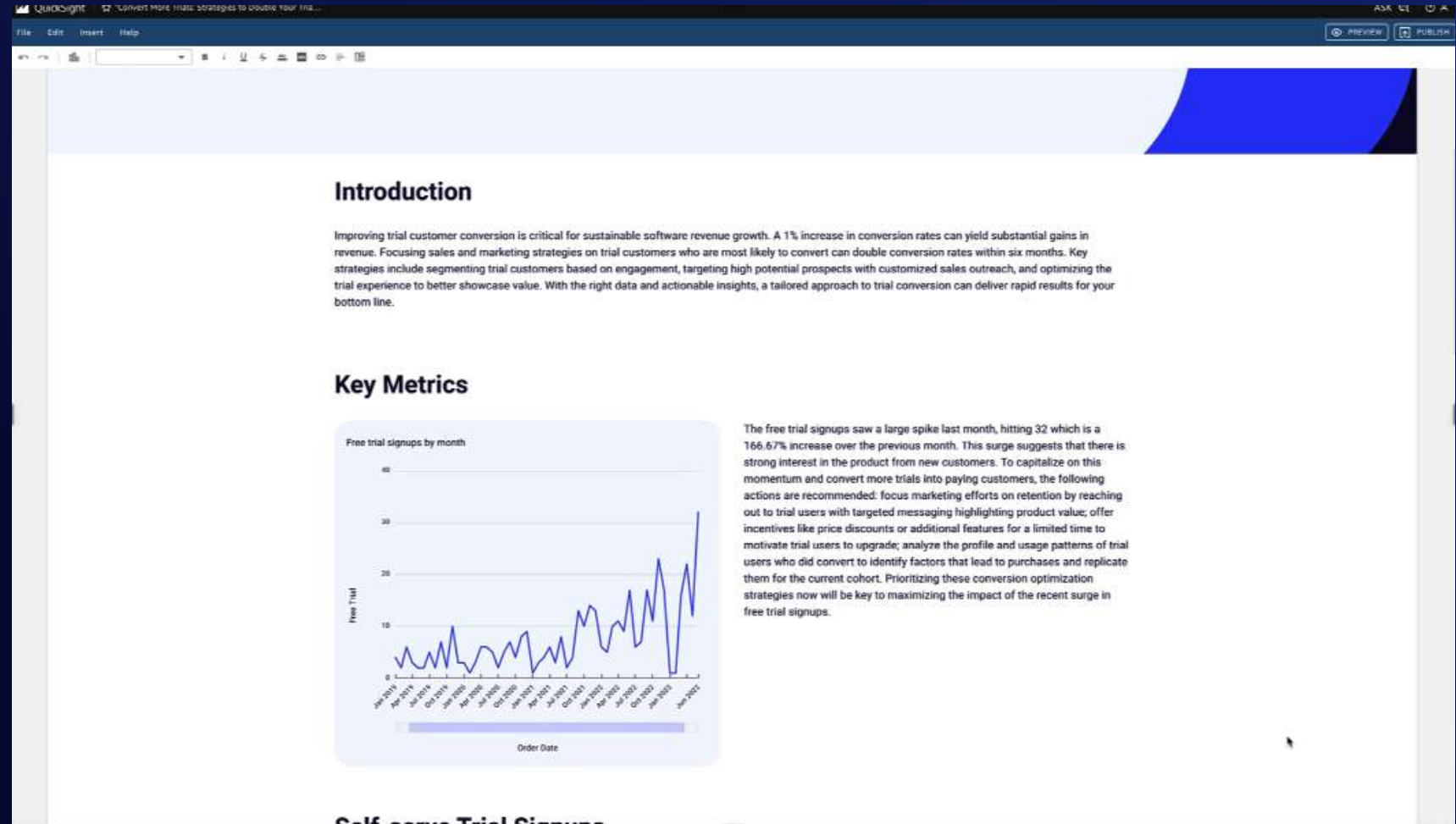
Generative ads – Breed x Age x City x Park x Language x Time of year



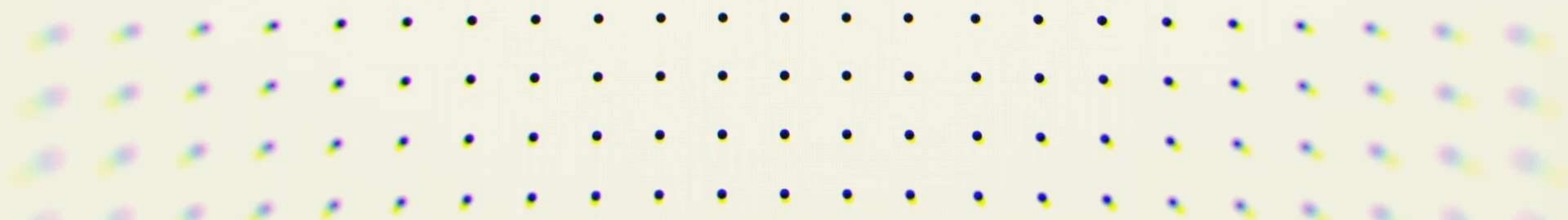


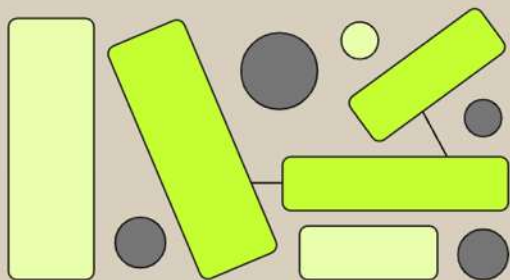
GenBI (Generative AI for Business Insights)

Describe the story you want and let QuickSight generate a rich data story



Build your own app





Fashion Assistant

Ye Olde Translator

Fruit Tree Recipe Finder

Resume Optimizer

Text to SQL

AWS Certification Planner



Thank you!