
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

AIM210

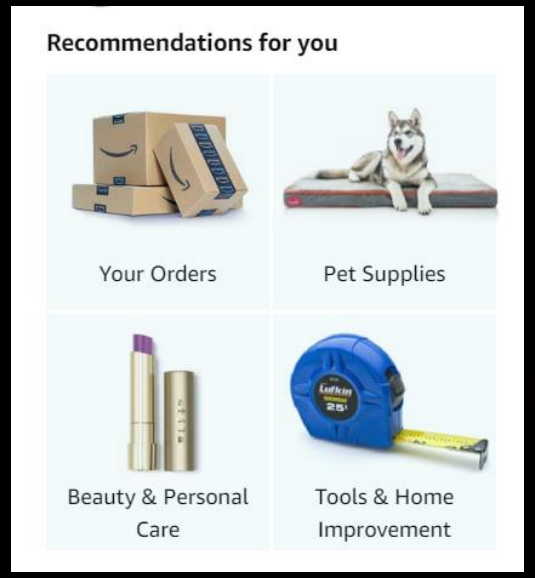
Solve common business problems with AWS AI/ML services

Albert Esplugas

Head of AI Solutions Marketing
AWS

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Amazon—Machine learning innovation at scale



4,000 products per minute sold on Amazon.com



1.6M packages every day



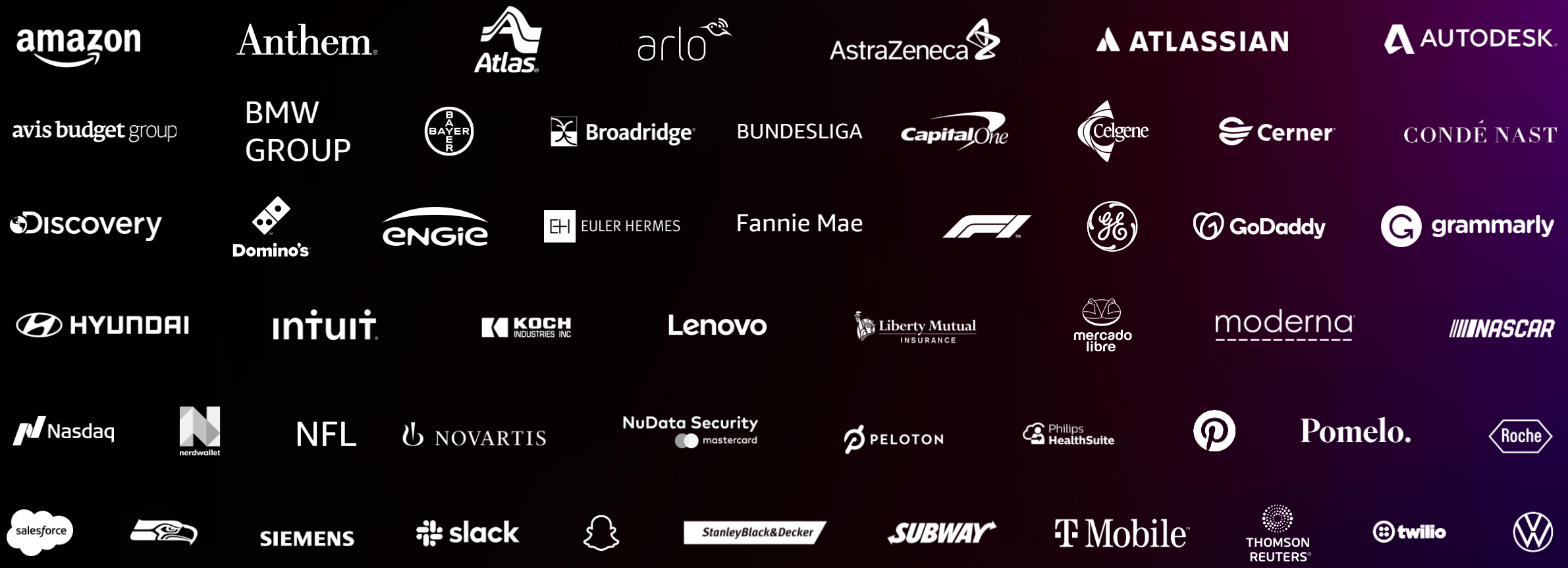
Billions of Alexa interactions each week



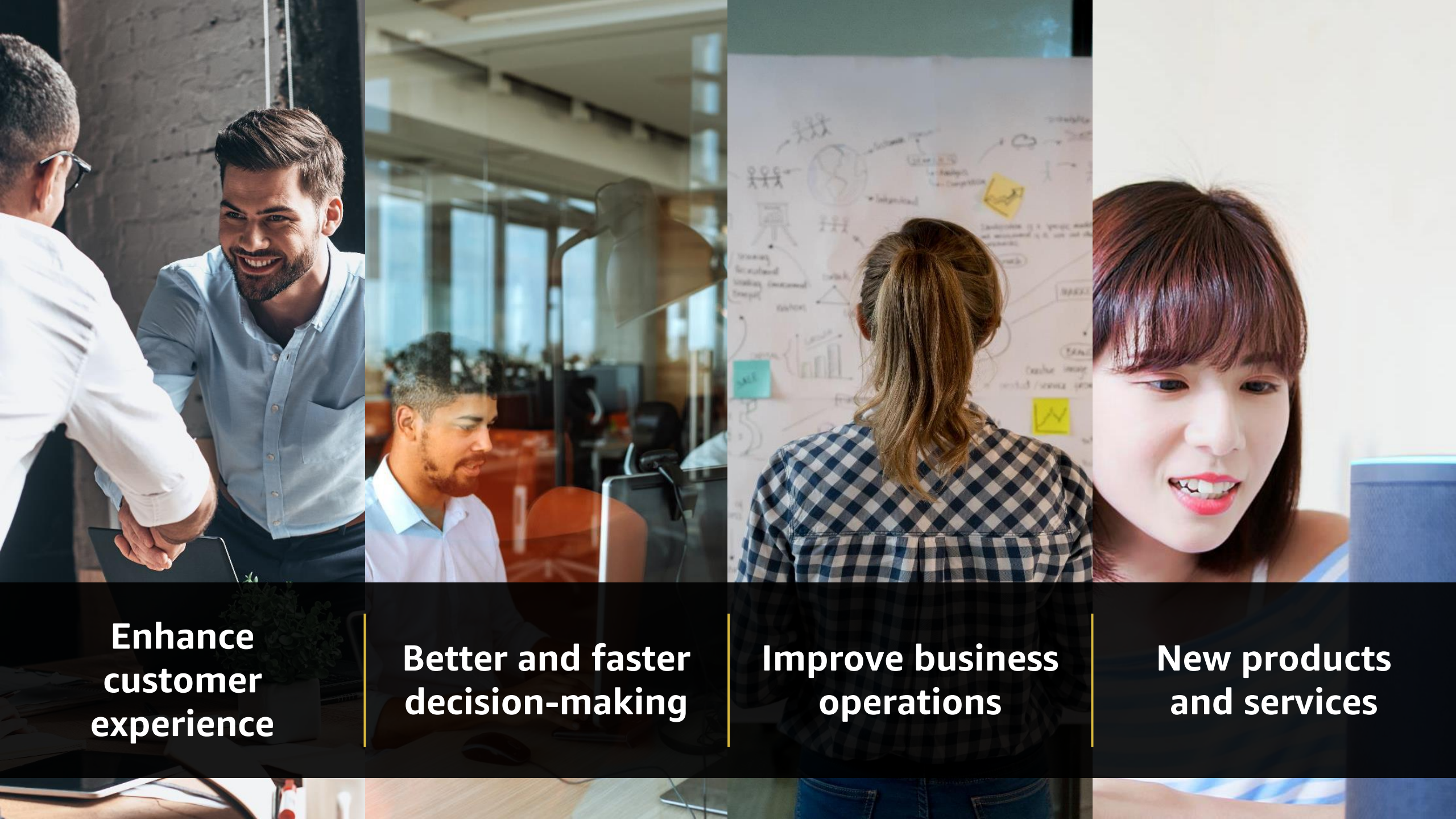
First Prime Air delivery on **December 7, 2016**

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100,000+ customers use AWS for machine learning



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Enhance customer experience

Better and faster decision-making

Improve business operations

New products and services

The universe of AI/ML is ever expanding

AI/ML use cases

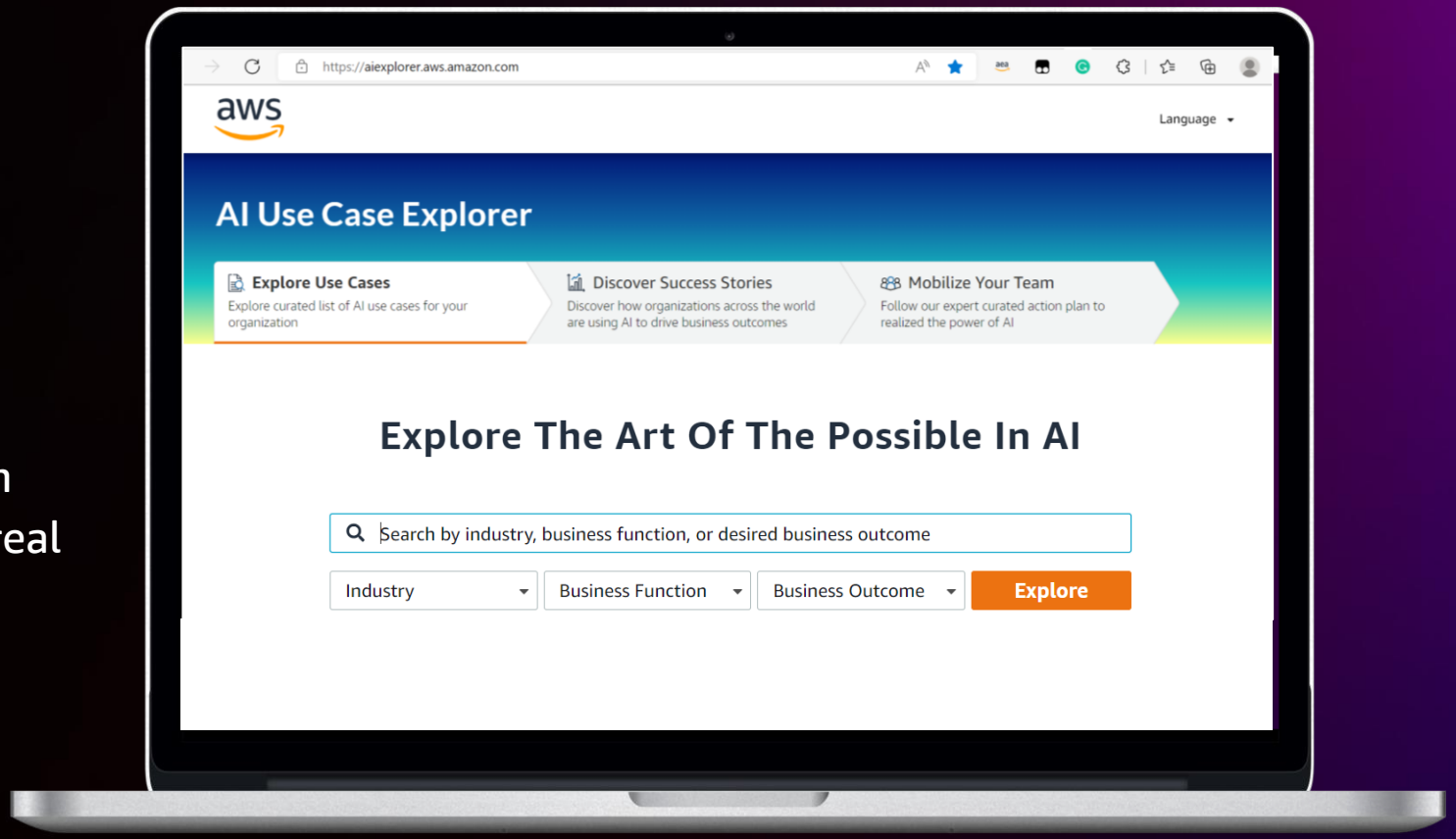
Forecasting	Anomaly detection	Contact center intelligence	Conversational AI
Intelligent document processing	Intelligent search	Media intelligence	ML modernization
AI for DevOps	Personalization	Identity verification	Automated content creation
Autonomous systems	Fraud Detection	Content moderation	Credit decisioning and underwriting
Cybersecurity	Digital twin/advanced digital simulation	AI for health	HR automation
AI for IT operations	Predictive maintenance	Quality control	Process automation
Supply chain optimization	Visual inspection	Workplace safety	+ Other use cases

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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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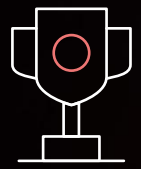
Our tool offers 3 main features



Explore use cases

Explore curated list of AI use cases for your organization

100+ use cases and sub use cases



Discover success stories

Discover how organizations across the world are using AI to drive business outcomes

400+ customer success stories



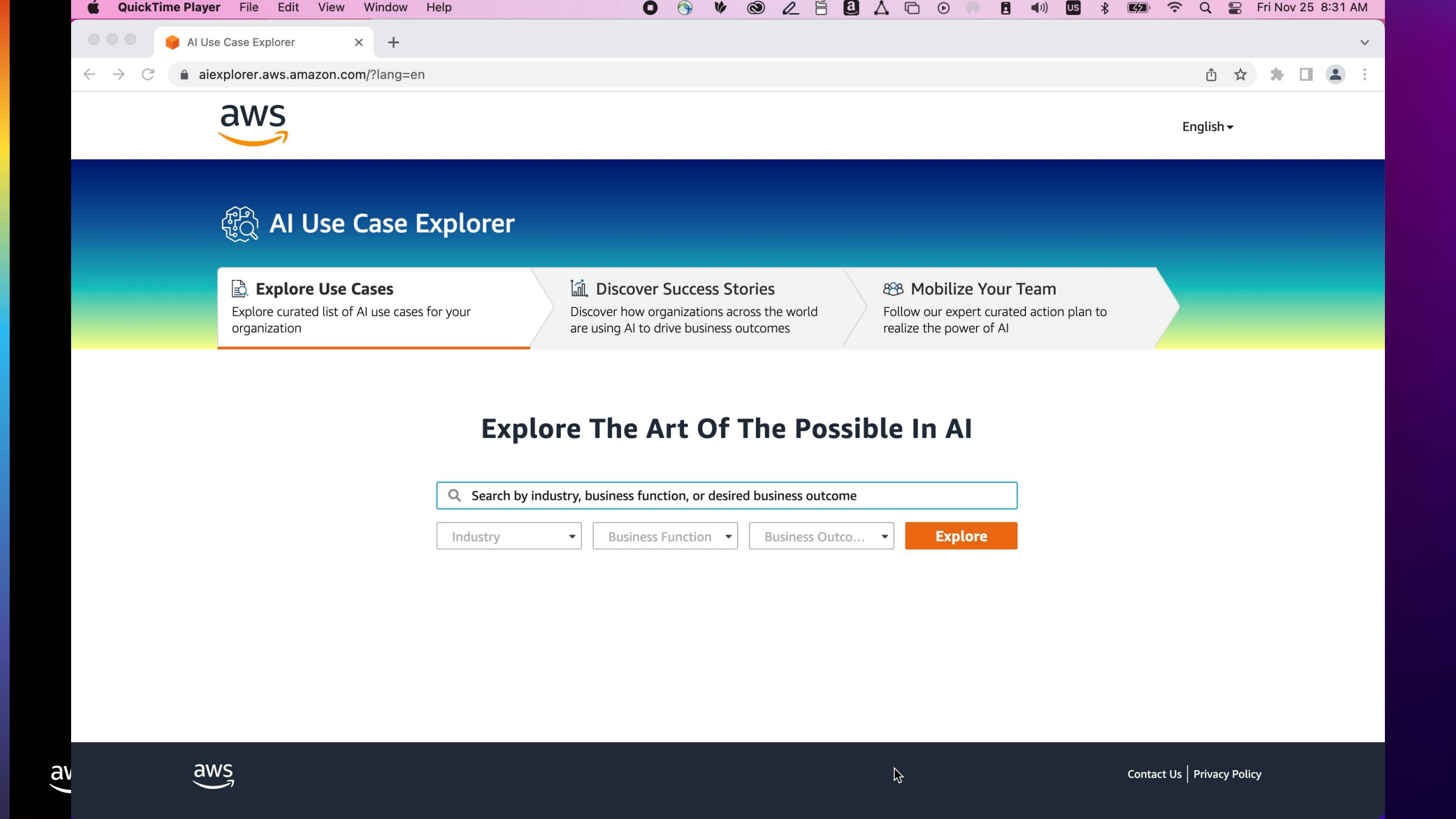
Mobilize your team

Follow our expert-curated action plan to realize the power of AI

50+ resources (ebooks, videos, demos)

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QuickTime Player File Edit View Window Help
Fri Nov 25 8:31 AM
AI Use Case Explorer
aiexplorer.aws.amazon.com/?lang=en
aws
English
AI Use Case Explorer
Explore Use Cases
Explore curated list of AI use cases for your organization
Discover Success Stories
Discover how organizations across the world are using AI to drive business outcomes
Mobilize Your Team
Follow our expert curated action plan to realize the power of AI
Explore The Art Of The Possible In AI
Search by industry, business function, or desired business outcome
Industry
Business Function
Business Outco...
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Today, we will do a deep dive on these use cases

AI/ML use cases

Forecasting	Anomaly detection	Contact center intelligence	Conversational AI
Intelligent document processing	Intelligent search	Media intelligence	ML modernization
AI for DevOps	Personalization	Identity verification	Automated content creation
Autonomous systems	Fraud Detection	Content moderation	Credit decisioning and underwriting
Cybersecurity	Digital twin/advanced digital simulation	AI for health	HR automation
AI for IT operations	Predictive maintenance	Quality control	Process automation
Supply chain optimization	Visual inspection	Workplace safety	+ Other use cases

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Contact Center Intelligence & Conversational AI

Great customer experience is critical for growth

75% stated that customer experience impacts purchasing decisions[1]

40% stopped doing business with a company due to poor customer service[2]

64% Customers find information delivered via a conversational AI interfaces valuable[3]

1. Statista, “Importance of customer experience,” bit.ly/3PGKciw
2. Statista, “Customers who stopped,” bit.ly/3CtGe9T
3. Statista, “Advantages of using,” bit.ly/3Rc8PF3



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Contact Center Intelligence Use Cases



Self-service bots & virtual agents



Real-time call analytics and Agent Assist



Post-call analytics

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Conversational AI Use Cases



Self-service bots & Voice Assistants



Proactive help based on usage behavior



Transactional bots

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AWS AI services powering AWS CCI & Conversational AI solutions

Amazon Lex	Amazon Polly	Amazon Transcribe	Amazon Comprehend	Amazon Kendra	Amazon Translate
					
Conversational AI	Text to speech	Speech to text	Natural language processing	Intelligent search	Machine translation

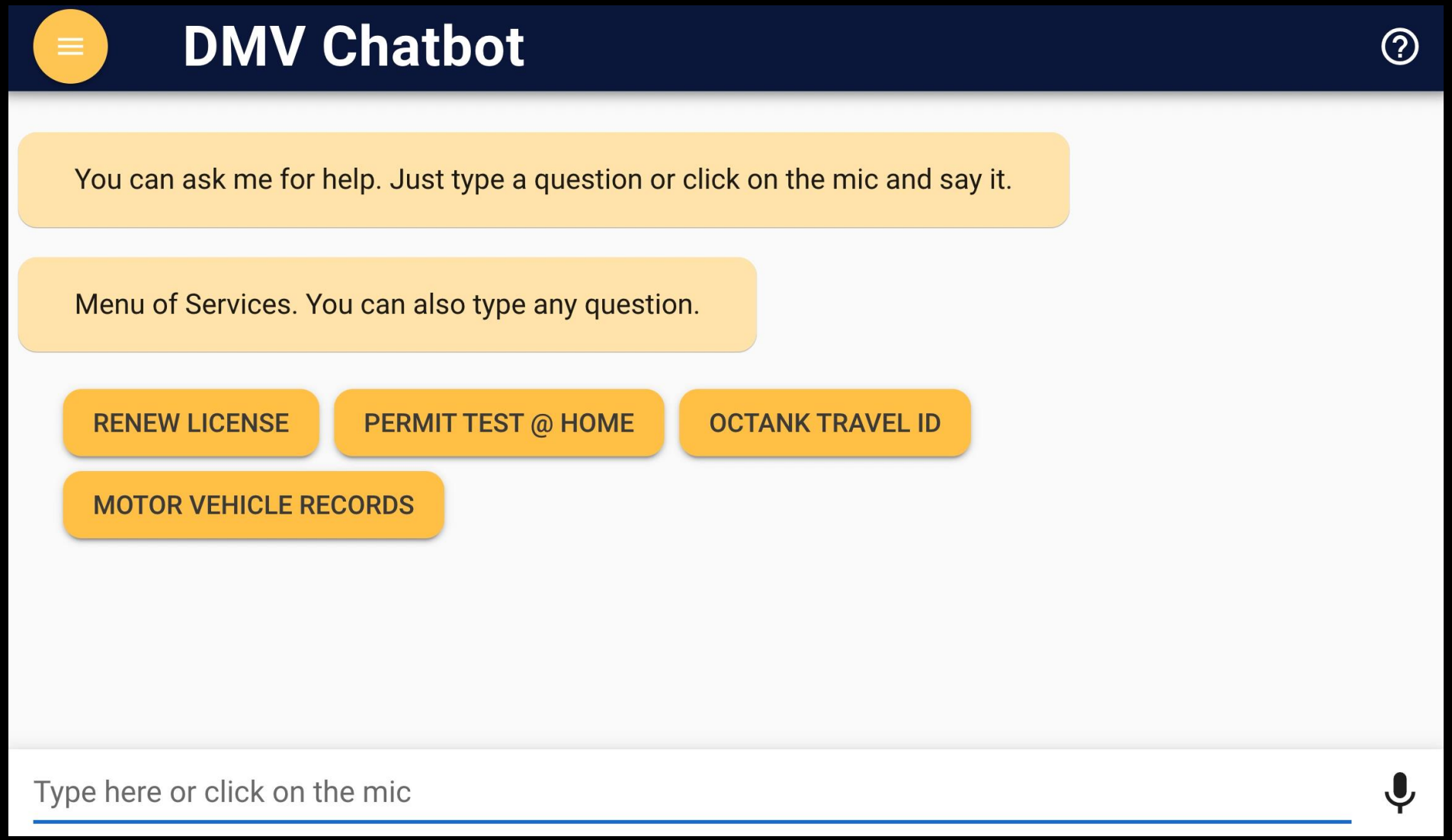
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Conversational AI

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FAQ
(Chatbot)



Get answers to frequently asked questions.

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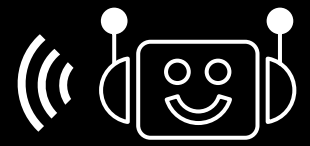
FAQ

(Voice)

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Thank you for calling DMV.
How can we help you?





FAQ

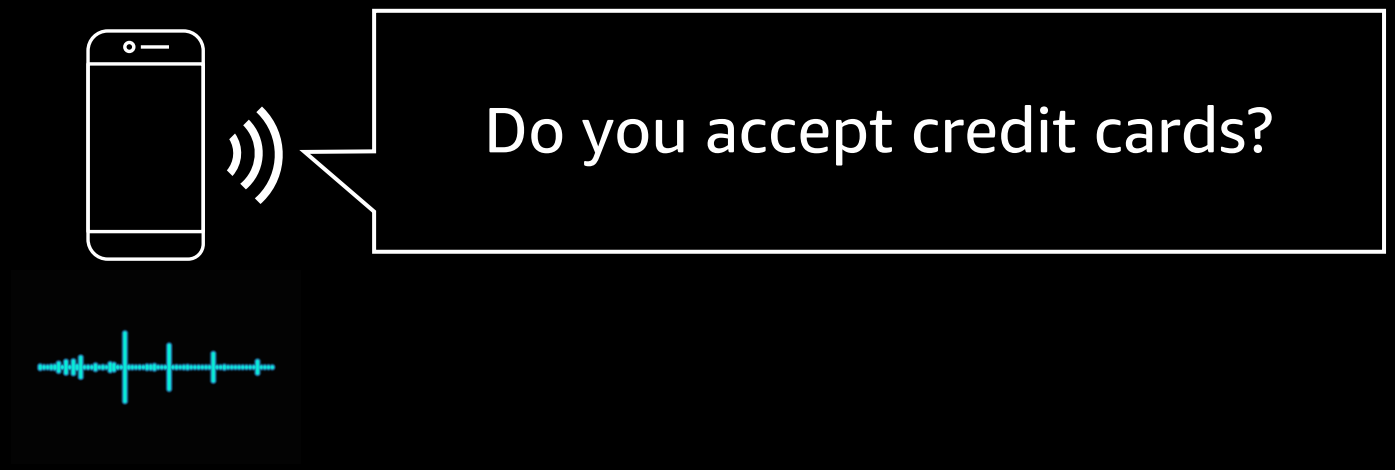
(Voice)

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FAQ

(Voice)



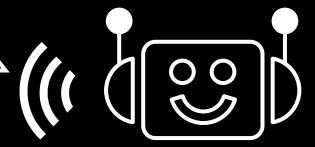
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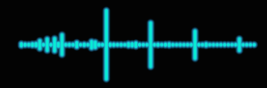


FAQ

(Voice)

We accept Visa, MasterCard, Discover and American Express. Is there anything else we can help you with?





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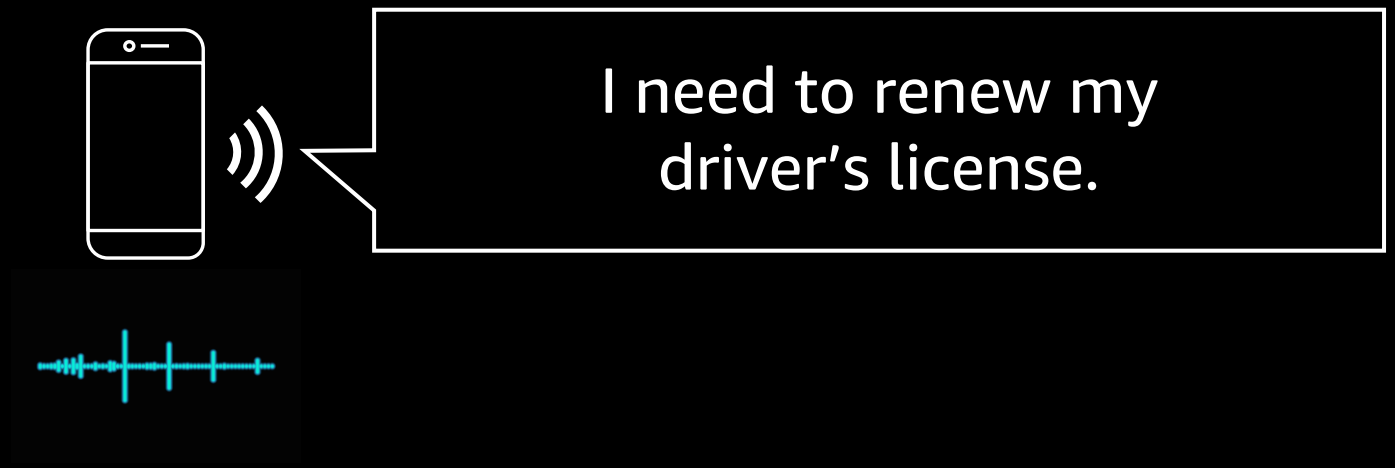
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Tasks

Capture, verify information and fulfill an intent, all without a live agent.

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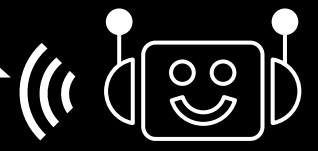


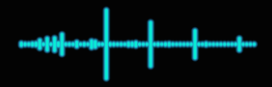
Tasks

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Do you want me to use the credit card on file?



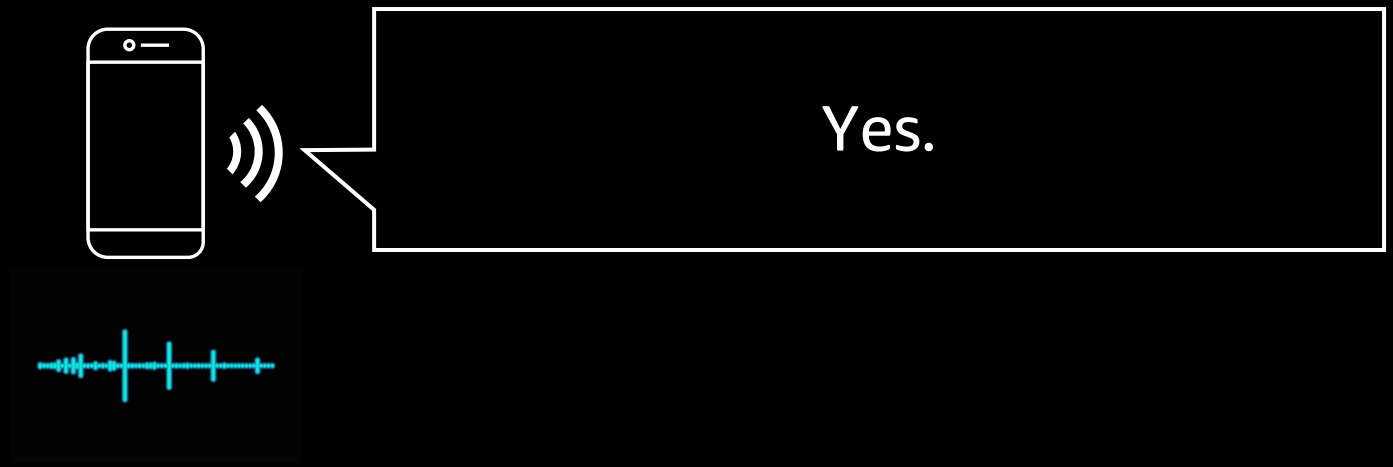


Tasks

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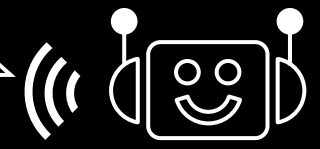
Tasks



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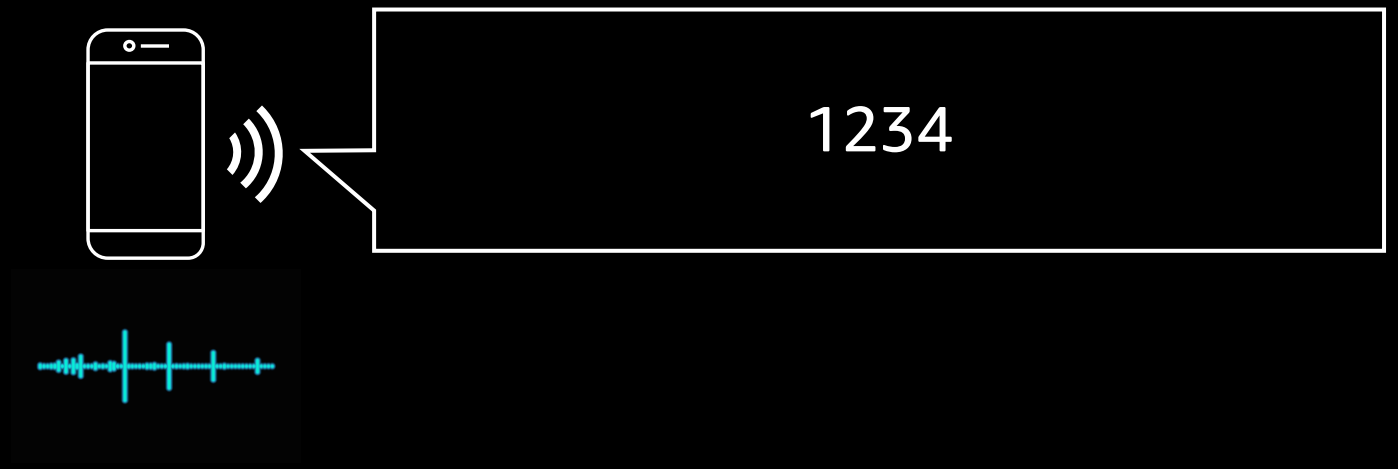
Tasks

Can you verify the last 4 digits of the card number?



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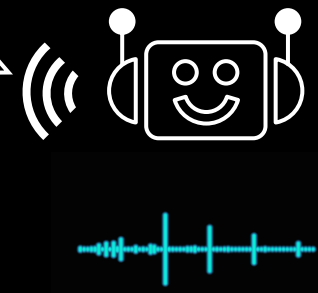
Tasks



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Tasks

Ok. Your drivers license has been renewed, and will be mailed to you in 1 to 2 weeks.



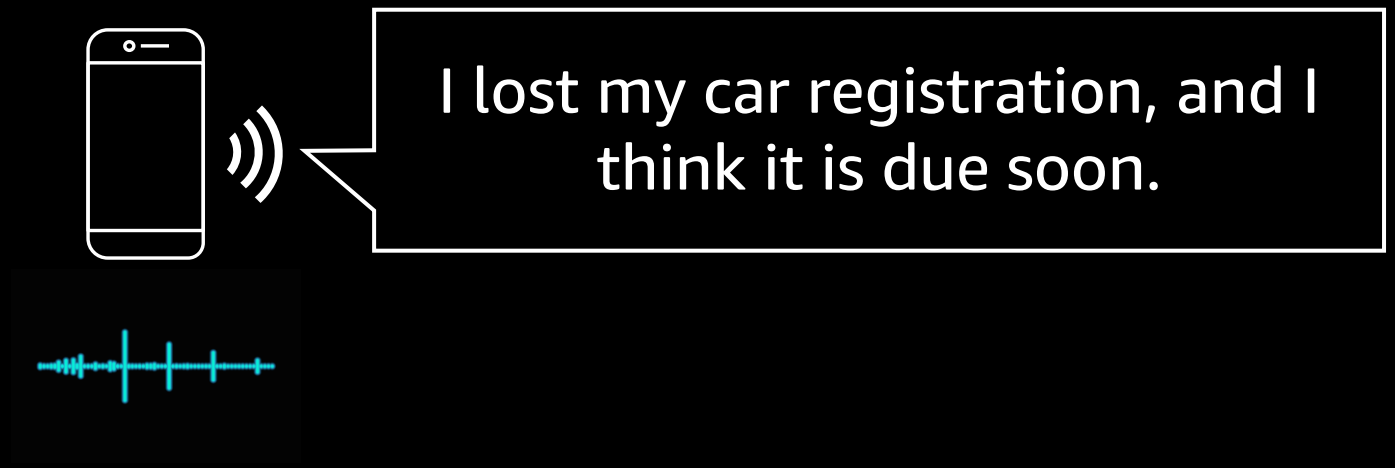
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Smart Transfer

Verify information and get the customer to the right agent with the best fit.

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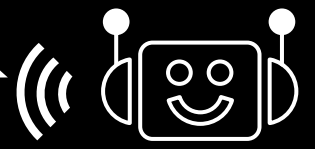
Smart Transfer

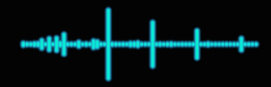
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Smart Transfer

What is the last 4 digits of the vehicle’s VIN number?

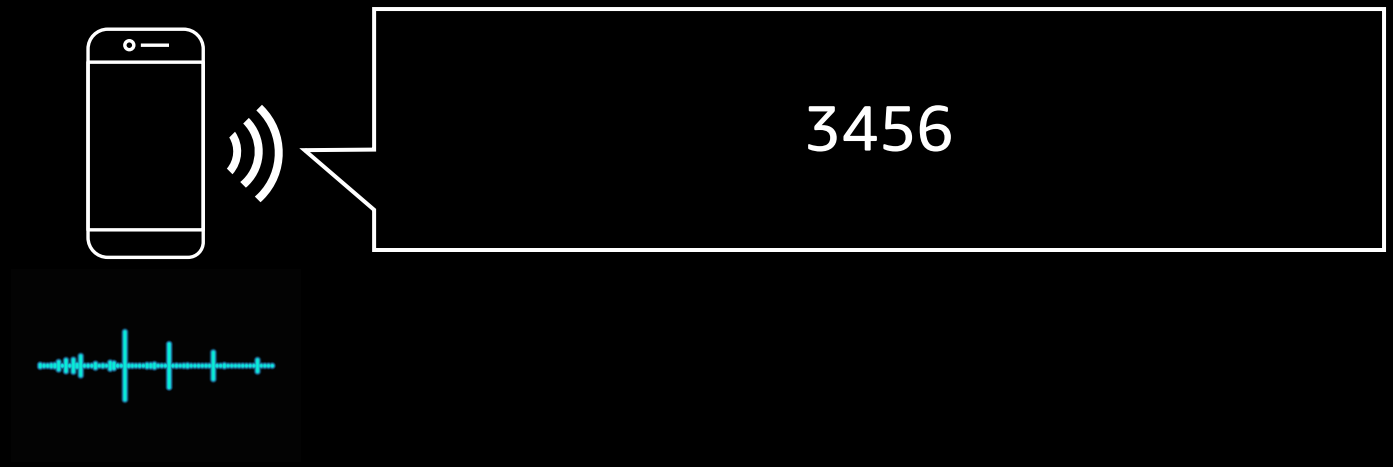




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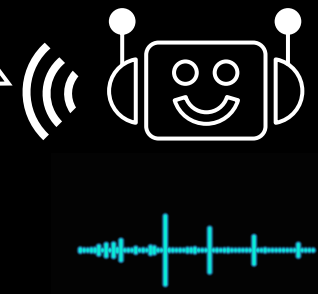
Smart Transfer



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Smart Transfer

Thanks, I have verified that you are the owner and will transfer you to an agent. Your wait time is less than 2 minutes.



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Conversational AI case studies

RYANAIR

Chatbot handle three million conversations a year

Languages supported: English, Italian, French, Spanish and German

govchat

GovChat today

Chatbot handled up to 14.2 million messages a day across social media platforms

13.5 million grant applications processed

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Contact Center Intelligence

Post Call Analytics

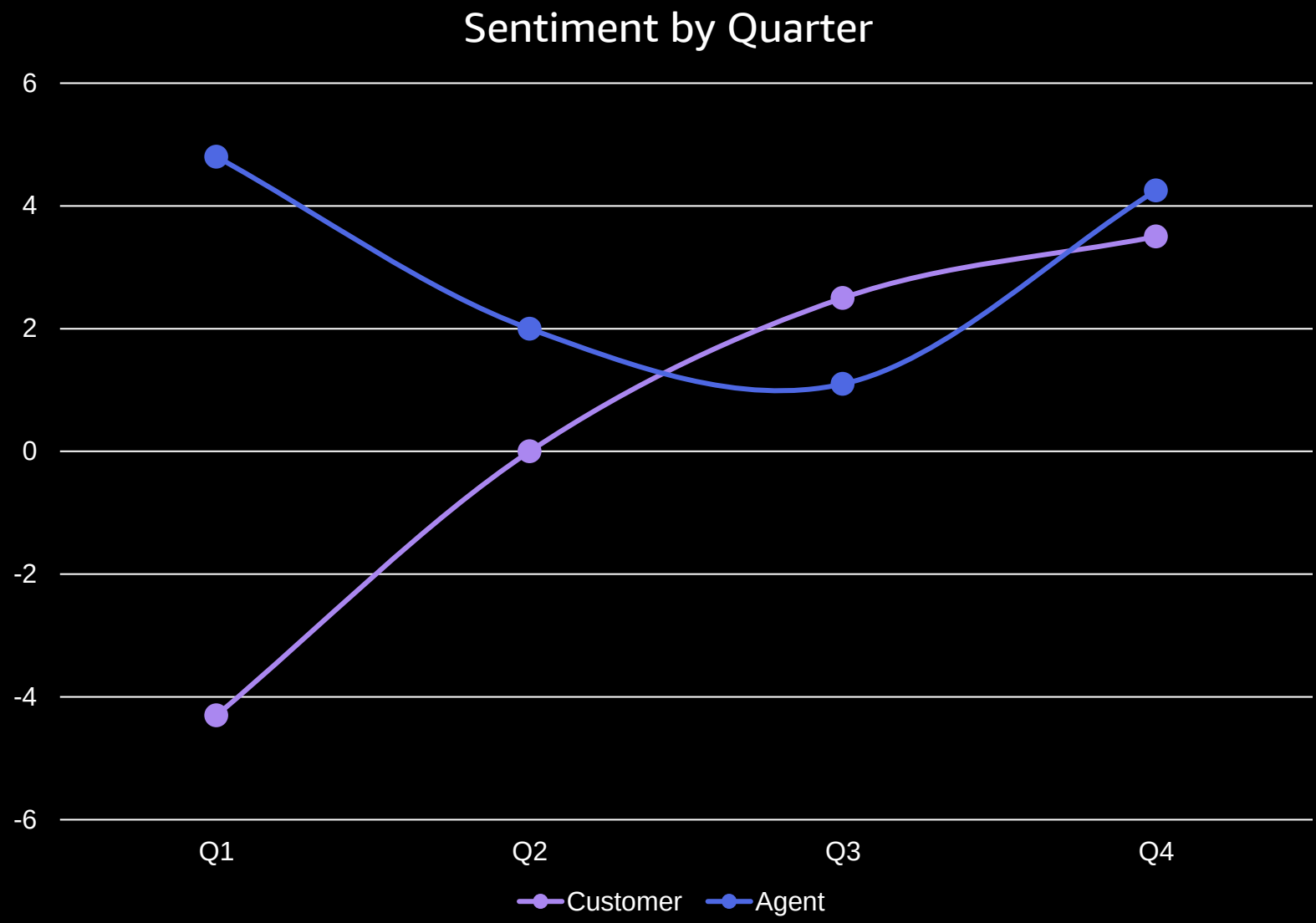
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Amazon Transcribe
Call Analytics

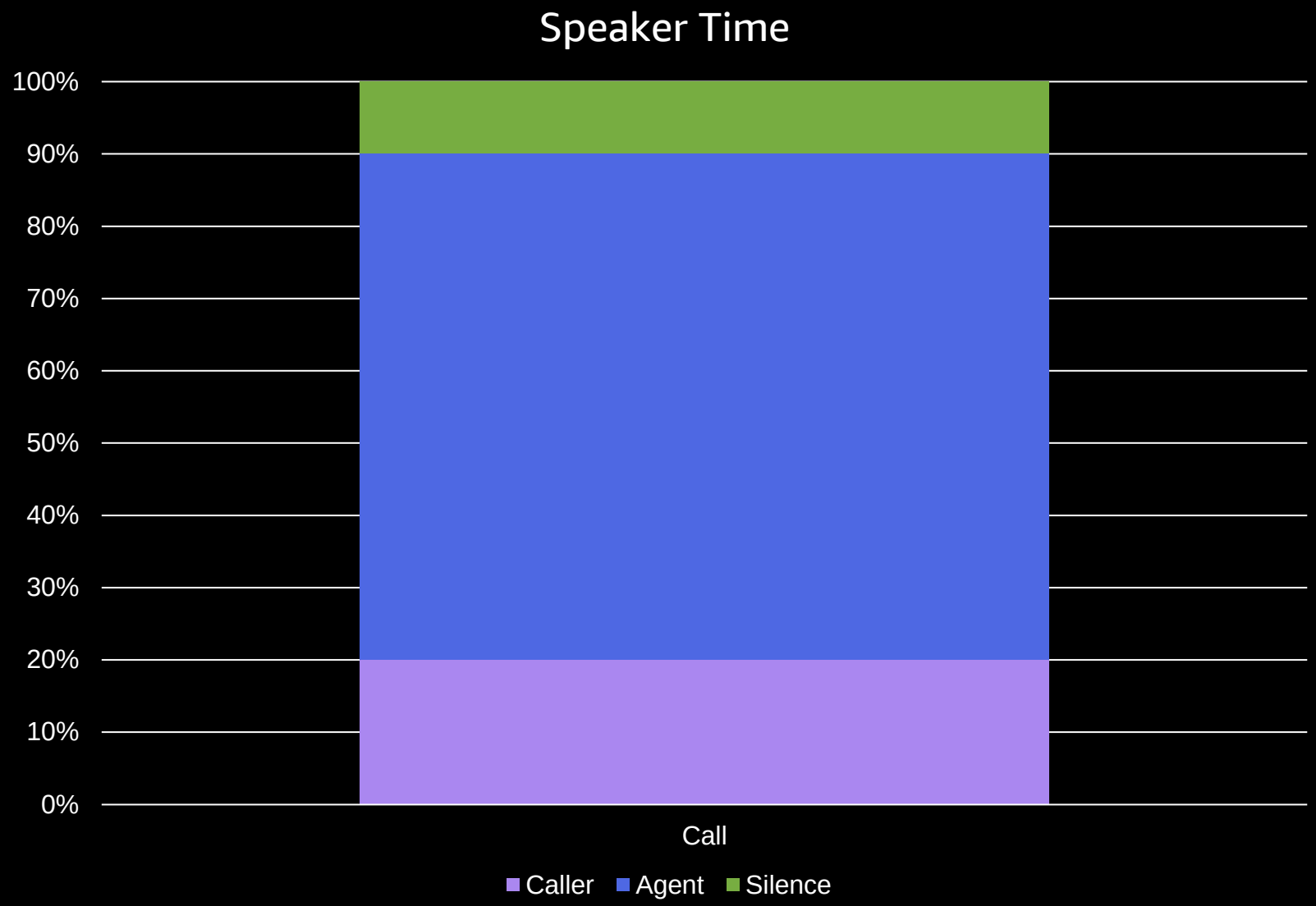
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Sentiment by quarter



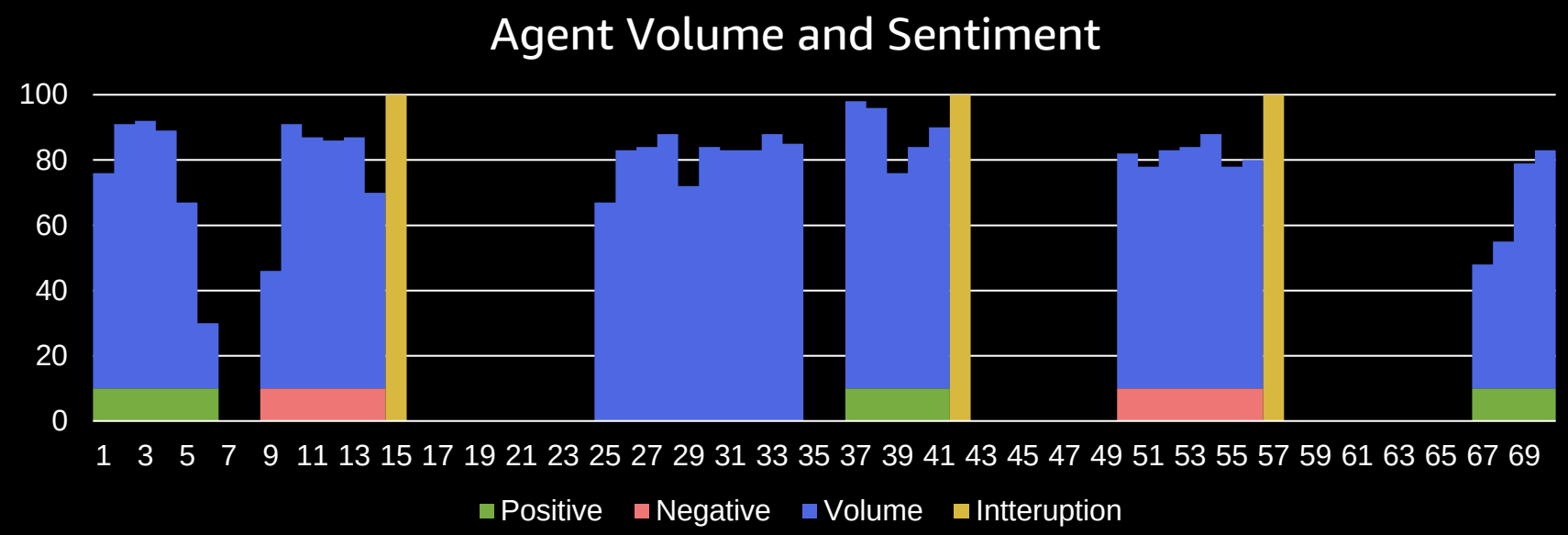
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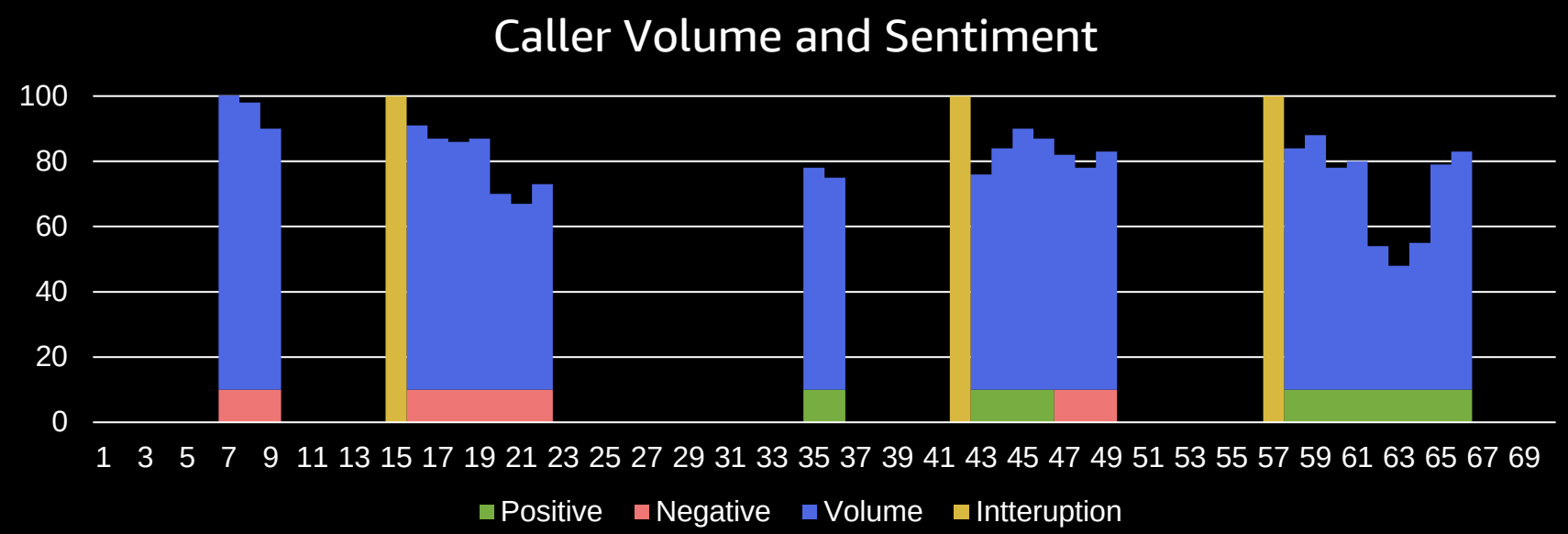
Speaker time



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Volume, Sentiment, Interruptions By Speaker





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Call Summarization

Issue:
[Caller] I dropped my credit card into the water.

Action Items:
[Agent] Ok, I'll have a new one sent to you.

Outcomes:
[Agent] Your card will arrive in 1-2 days.

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Entities

Product Names:
Checking account, savings account, money market account, 401k

Organizations:
Anchor Credit Union, Credit Bank

Locations:
Seattle, San Francisco, Boston

Persons:
Bank teller

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Turn-by-turn Transcriptions

Agent [0:00]
Thank you for calling Anchor Credit Union, the number one choice for captains world wide, how can I help you?

Customer [0:06]
Hi, so I was at the fisherman's terminal.

Agent [0:07]
Yes, mmhm

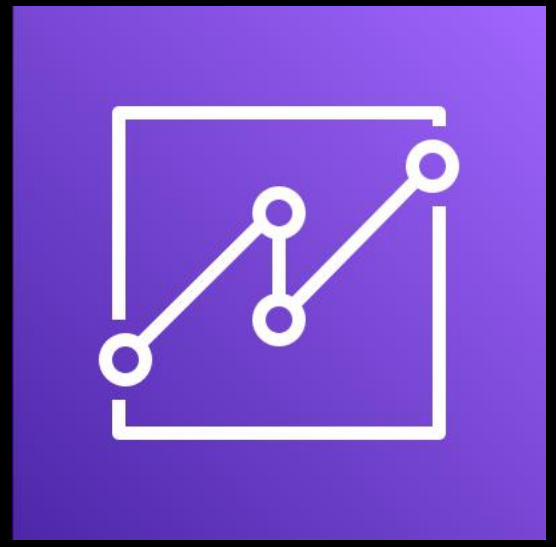
Customer [0:11]
I'm trying to dock up my ship and my credit card fell into the water, so I'm hoping I can get it replaced.

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Integrates with Business Intelligence Tools



Amazon Athena



Amazon QuickSight

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Contact Center Intelligence

Live Call Analytics

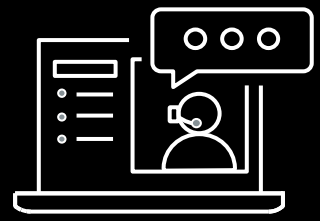
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Sentiment & Issue Detection

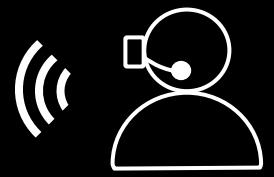
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Sentiment & Issue Detection

Agent Assist: Incoming call
Subject: lost registration
Vin: *3456



Hello, thank you for calling the DMV. I see you are calling about a lost car registration, for the VIN # that ends in 3456.



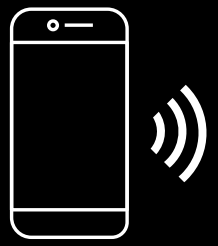


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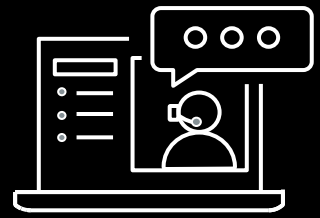


Sentiment & Issue Detection





Agent Assist: Incoming call
Subject: lost registration
Vin: *3456



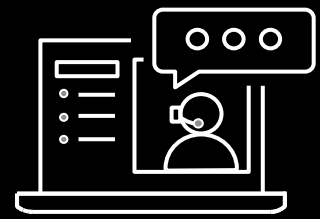
Hello, thank you for calling the DMV. I see you are calling about a lost car registration, for the VIN # that ends in 3456.



Yes, I'm so angry that I lost my registration paper. I need to sell my car ASAP.



Issue Detected: Lost Registration Papers

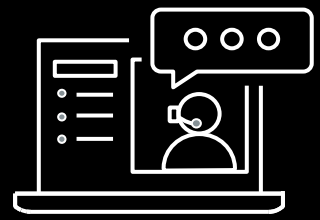


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Agent Assist

Agent Assist: Lost Registration
Verify mailing address.
Should be 555 main street.



I am very sorry to hear you’re frustrated. Don't worry, we can get this resolved. Can you please verify the mailing address where we will send the new registration?

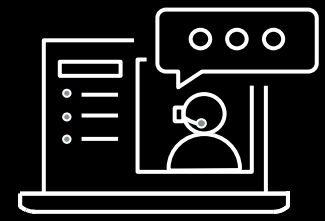


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Agent Assist: Lost Registration
Verify mailing address.
Should be 555 main street.



I am very sorry to hear you're frustrated. Don't worry, we can get this resolved. Can you please verify the mailing address where we will send the new registration?



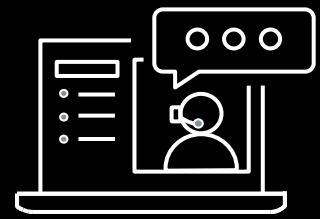
Agent Assist



555 Main Street



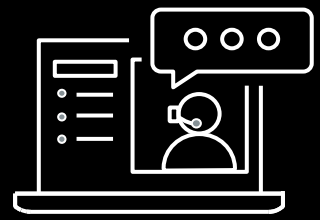
Agent Assist: Address detected.



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Agent Assist: Registration request received, will be mailed in 1-2 weeks.

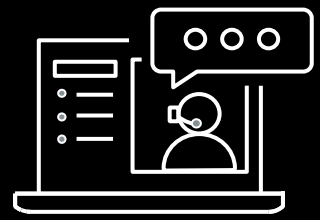


Task Fulfillment

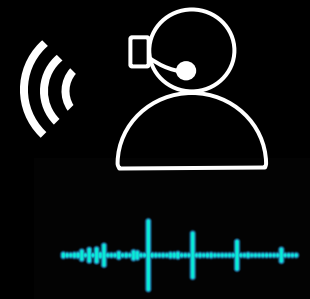
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Task Fulfillment

Agent Assist: Registration request received, will be mailed in 1-2 weeks.



Ok, your new registration is being sent and you will receive it in 1-2 weeks. Is there anything else I can help you with?



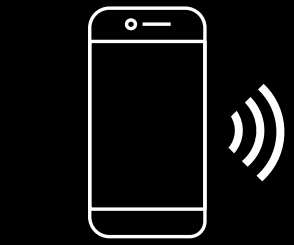
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Task Fulfillment

Agent Assist: Registration request received, will be mailed in 1-2 weeks.

Ok, your new registration is being sent and you will receive it in 1-2 weeks. Is there anything else I can help you with?

No, thank you so much, I am so relieved. Have a nice day.



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Live Call Analytics with Agent Assist

Time

AGENT CALLER

Time

AGENT CALLER

Call Transcript Info

Auto scroll

AGENT 00:00.0 - 00:04.6
Hello, thank you for calling the DMV. I see you are calling about a lost car registration, for the VIN # that ends in 3456.

CALLER 00:09.9 - 00:12.1
Yes, I'm so angry that I lost my registration paper. I need to sell my car ASAP.

AGENT_ASSISTANT 00:09.9 - 00:12.1
Lost Registration Detected. Verify mailing address, should be 555 Main Street.

AGENT 00:47.6 - 00:48.1
What is your address?

CALLER 00:25.5 - 00:26.9
555 Main Street.

AGENT_ASSISTANT 00:25.5 - 00:26.9
Registration request received, will be mailed in 1-2 weeks.

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Contact Center Intelligence case studies



Derived key insights from millions of calls made to CSRs using Amazon Transcribe, used to help CSRs better address calls from customers and to improve its web application. Would have required 8-10 employees to extract the same insights from 5,000 claims calls per week.



Expanded customer sentiment visibility to 100% of the calls.

aws
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Intelligent Document Processing

IDP across industries



Financial services

Accurately extract data and insights from loan applications, tax forms, driver's licenses, and other documents quickly and cost effectively



Healthcare & life sciences

Process insurance claims and quickly get to clinical insights faster from healthcare and patient intake forms



Manufacturing & retail

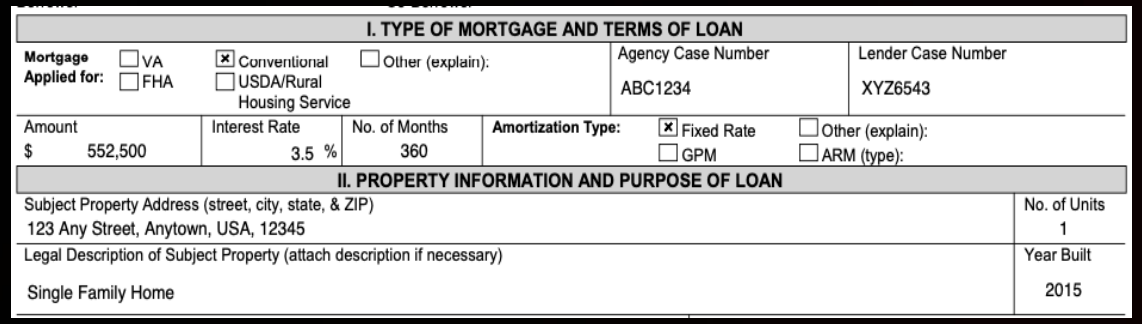
Analyze invoices, bills of materials, contracts, licenses, warranties, and other agreements

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Go beyond OCR with accurate, versatile information extraction

Accuracy of forms and tables allows customers to reach 80–90% automation levels on documents that previously needed manual processing.

INPUT → OUTPUT



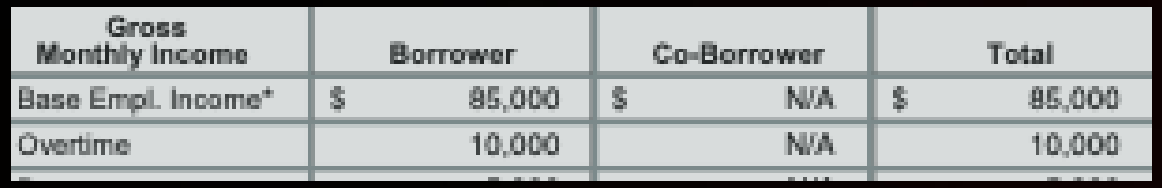
I. TYPE OF MORTGAGE AND TERMS OF LOAN

Mortgage Applied for:	Agency Case Number	Lender Case Number
☐ VA ☐ FHA ☒ Conventional ☐ USDA/Rural Housing Service ☐ Other (explain):	ABC1234	XYZ6543

Amount	Interest Rate	No. of Months	Amortization Type:	
$ 552,500	3.5 %	360	☒ Fixed Rate ☐ GPM	☐ Other (explain): ☐ ARM (type):

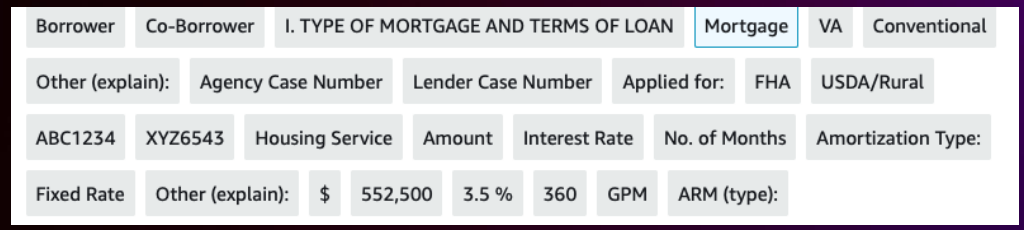
II. PROPERTY INFORMATION AND PURPOSE OF LOAN

Subject Property Address (street, city, state, & ZIP)	No. of Units
123 Any Street, Anytown, USA, 12345	1
Legal Description of Subject Property (attach description if necessary)	**Year Built**
Single Family Home	2015



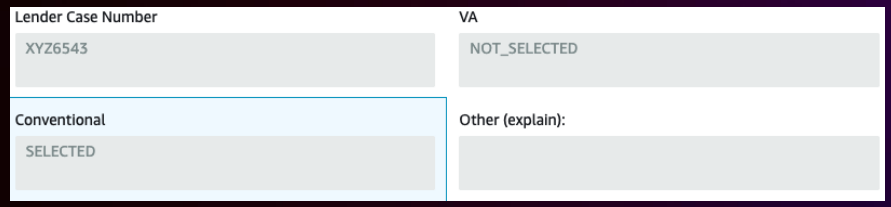
Gross Monthly Income	Borrower	Co-Borrower	Total
Base Empl. Income*	$ 85,000	$ N/A	$ 85,000
Overtime	10,000	N/A	10,000

Raw Text



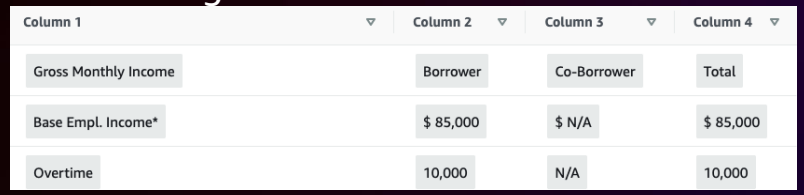
Borrower | Co-Borrower | I. TYPE OF MORTGAGE AND TERMS OF LOAN | Mortgage | VA | Conventional | Other (explain): | Agency Case Number | Lender Case Number | Applied for: | FHA | USDA/Rural | ABC1234 | XYZ6543 | Housing Service | Amount | Interest Rate | No. of Months | Amortization Type: | Fixed Rate | Other (explain): | $ | 552,500 | 3.5 % | 360 | GPM | ARM (type):

Forms



Lender Case Number	VA
XYZ6543	NOT_SELECTED
Conventional	**Other (explain):**
SELECTED	

Table Recognition



Column 1	Column 2	Column 3	Column 4
Gross Monthly Income	Borrower	Co-Borrower	Total
Base Empl. Income*	$ 85,000	$ N/A	$ 85,000
Overtime	10,000	N/A	10,000

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Analyze documents and send key insights to downstream systems and workflows

Redaction of sensitive data

Hi, my name is John Doe. For verification, the last 4 digits of my social are 6789 and my DOB is 01/01.

Hi, my name is [NAME]. For verification, the last 4 digits of my social are [SSN] and my DOB is [DATE_TIME].

Classify type of document



- Appeal
- Medical record
- Disputed invoice
- Provider contract v1
- Provider contract v2

Recognize medical entities or those specific to your business

Document text:
Mr. Smith is a 63-year-old gentleman with coronary artery disease and hypertension. CURRENT MEDICATIONS: taking a dose of LIPITOR 20 mg once daily.

Output:

Category of entity:	MedCondition
Type:	Dx name
Entity:	Hypertension
Confidence:	0.99

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aws Intelligent Document Processing

Learn more

Insurance

Case Worker Portal



Insurance claims and the communication around each claim means documents come in various channels and formats with long paragraphs of text or forms with applicant information proving a

Mortgage

Loan Processor Portal



A mortgage packet can come with up to 20 different types of forms such as W-2's, bank statements, and deed information which makes it difficult to use traditional technologies to automat

Intelligent Document Processing case studies



Automated 90% of their claims-processing workflow.

BLACK KNIGHT®

The Black Knight ML team worked with the AWS ML Solutions Lab to provide faster and more reliable processing behind Black Knight's mortgage origination solutions, allowing our lender clients to be more competitive and efficient, and providing operating leverage to further accelerate their growth.

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Personalization

Why personalization is so important

60% of consumers say they will be repeat customers after a personalized experience

Organizations that implement personalization realize a **10-15% lift in revenue**

It can cost **5 times** more to gain a new customer than to retain an existing customer



https://www.invespcro.com/blog/customer-acquisition-retention/
https://www.twilio.com/blog/announcing-the-state-of-personalization-2021
https://www.mckinsey.com/business-functions/growth-marketing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying

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ML-Powered Personalization

The benefits of Amazon Personalize



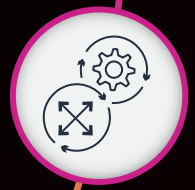
Deliver high quality recommendations

Up to 50% better recommendations for fast changing catalogs



Personalize every customer touchpoint

Easy integration into your existing website, app, SMS, and email marketing systems



Reduce time to market



All data is encrypted to be private and secure, and is only used to create recommendations for your customers

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Amazon Personalize Prebuilt Recommenders

Retail

- Recommended for you
- Customers who viewed this also viewed
- Frequently bought together
- Most viewed
- Best sellers

Media & Entertainment

- Top picks for you
- Promotions
- Because you watched X
- More like Y
- Most popular / trending now

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Amazon Personalize case studies



56%

increase in product page views



67%

increase in article reads per fan

17%

increase in time users spend on the app

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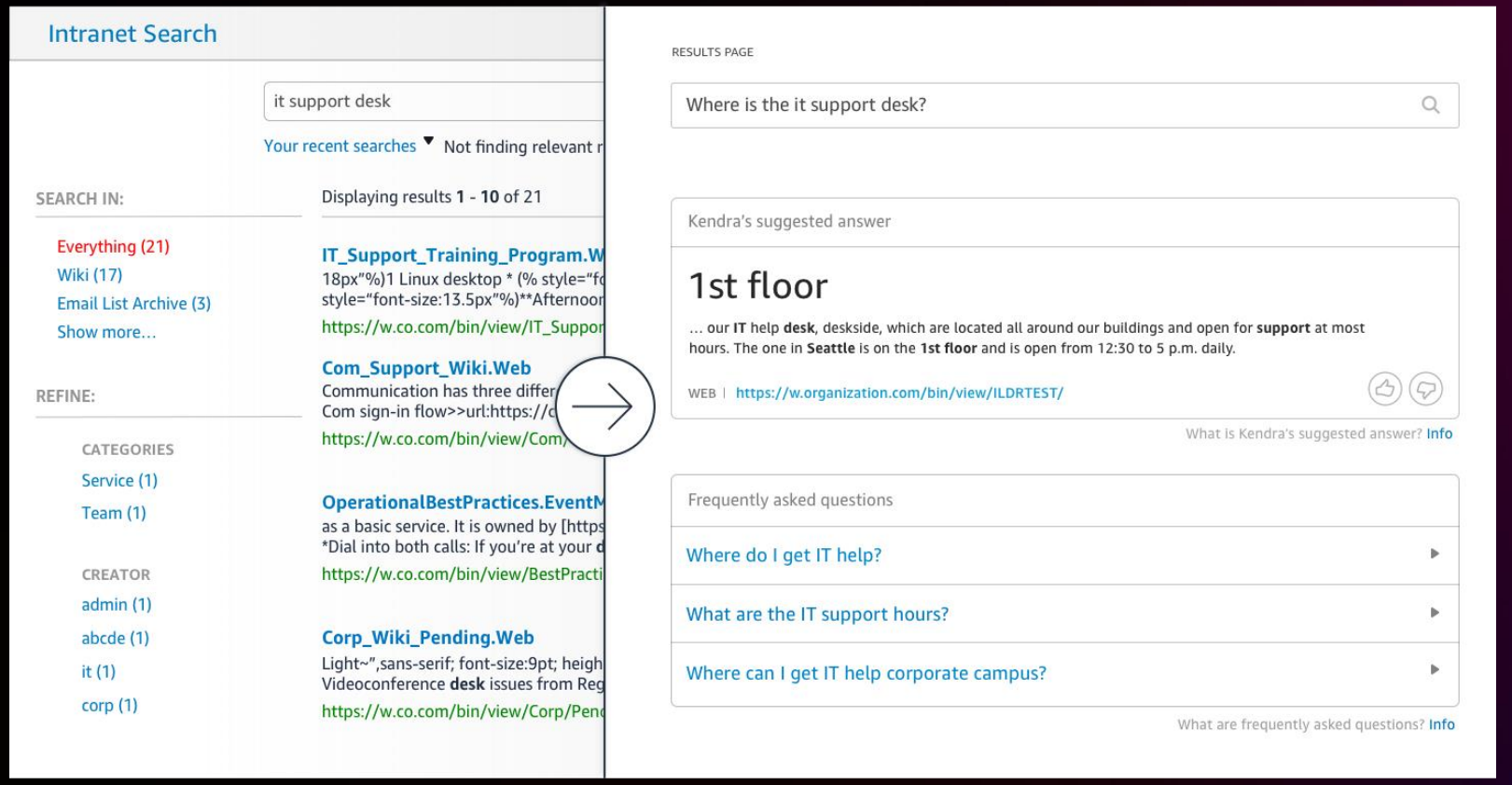
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Intelligent Search

Intelligent Search

FIND ACCURATE INFORMATION QUICKLY AND EASILY

Traditional search



Intelligent search

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Top intelligent search use cases



Customer experiences

- Agent Assist with accurate search
- Self-service chatbots
- Website search



Enterprise search

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



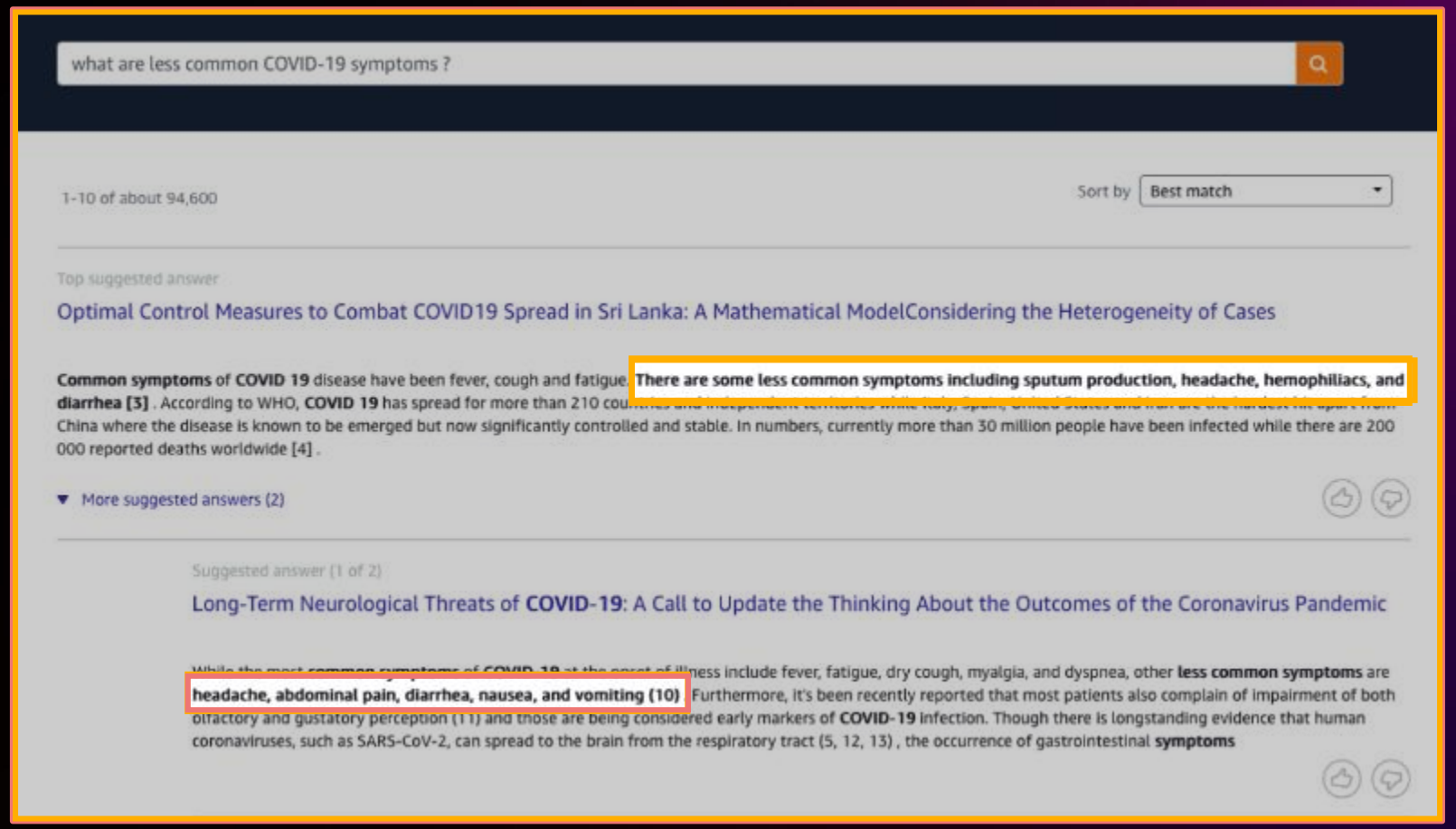
Embedded search

- Add intelligent search to SaaS applications like CRMs, knowledge management systems, productivity apps, etc.

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Amazon Kendra





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NLU and ML core

Natural language queries

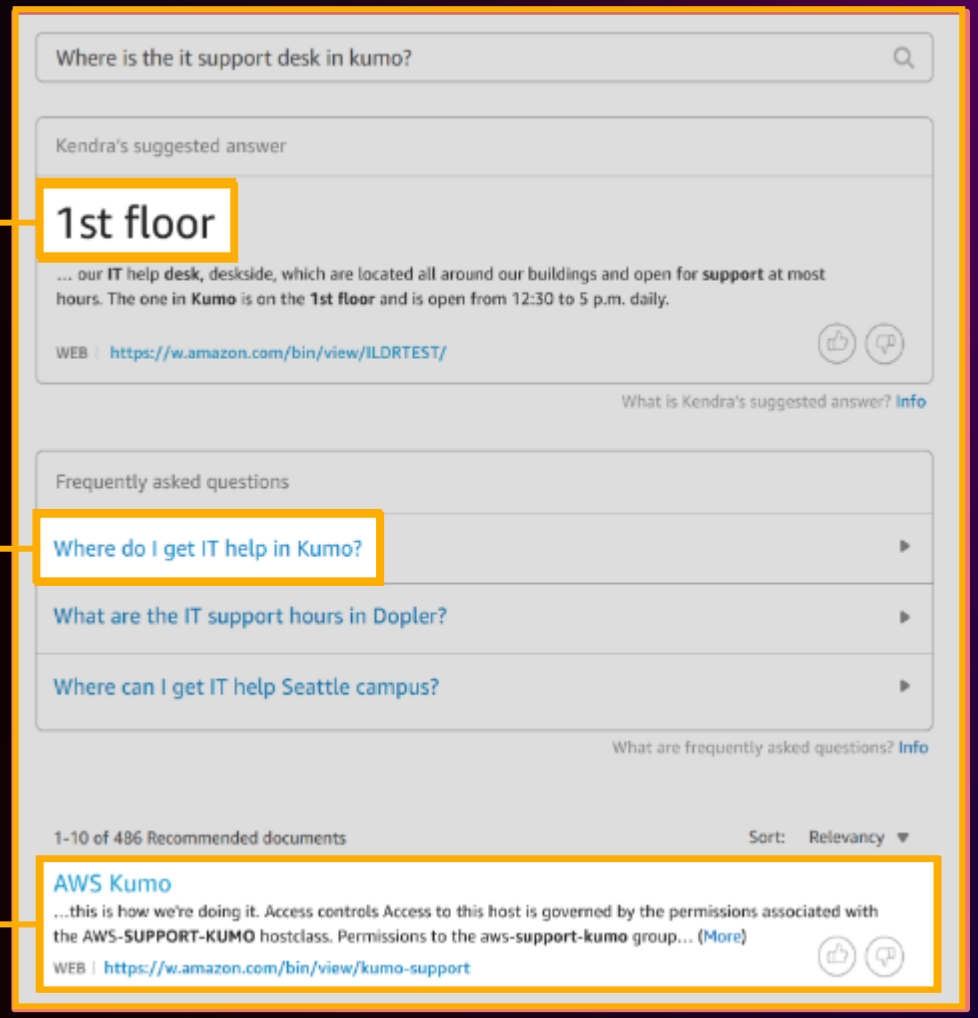
NLU and ML core

Better answers

Reading comprehension

FAQ matching

Document ranking



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Domain expertise

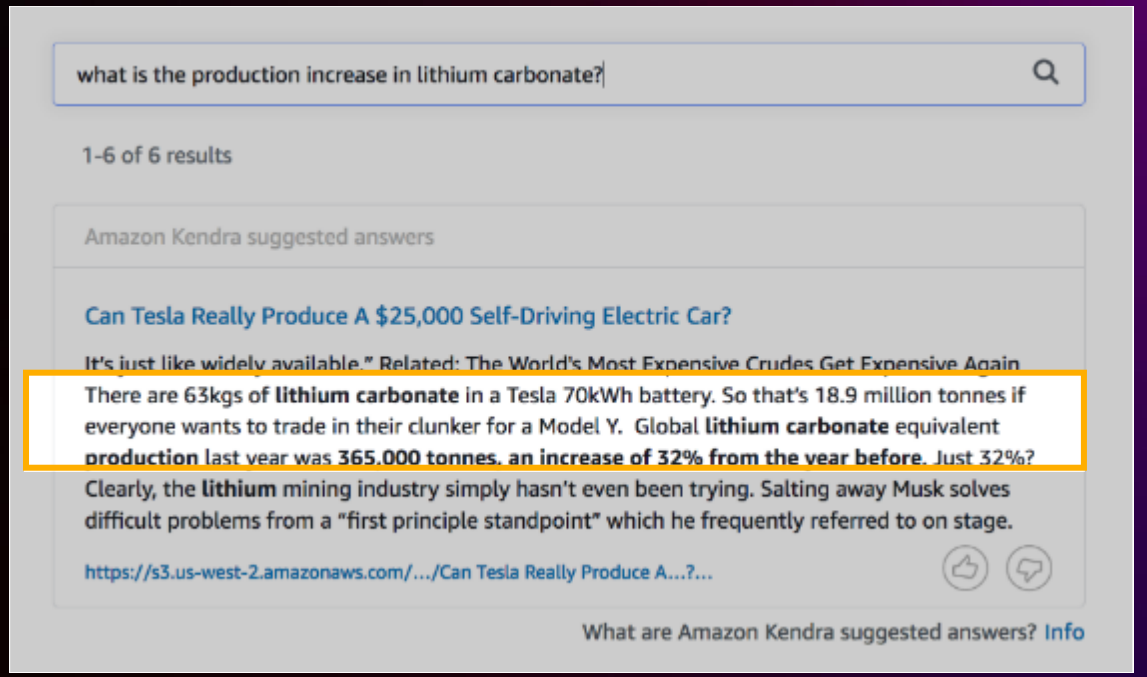
Natural language queries

NLU and ML core

Domain expertise

Optimized for 14 major domains

IT, Financial Services, Insurance, Pharma, Industrial, Energy, Legal, Media and Entertainment, Travel and Hospitality, Health, HR, News, Telecommunications, and Automotive



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Incremental learning

Natural language queries

NLU and ML core

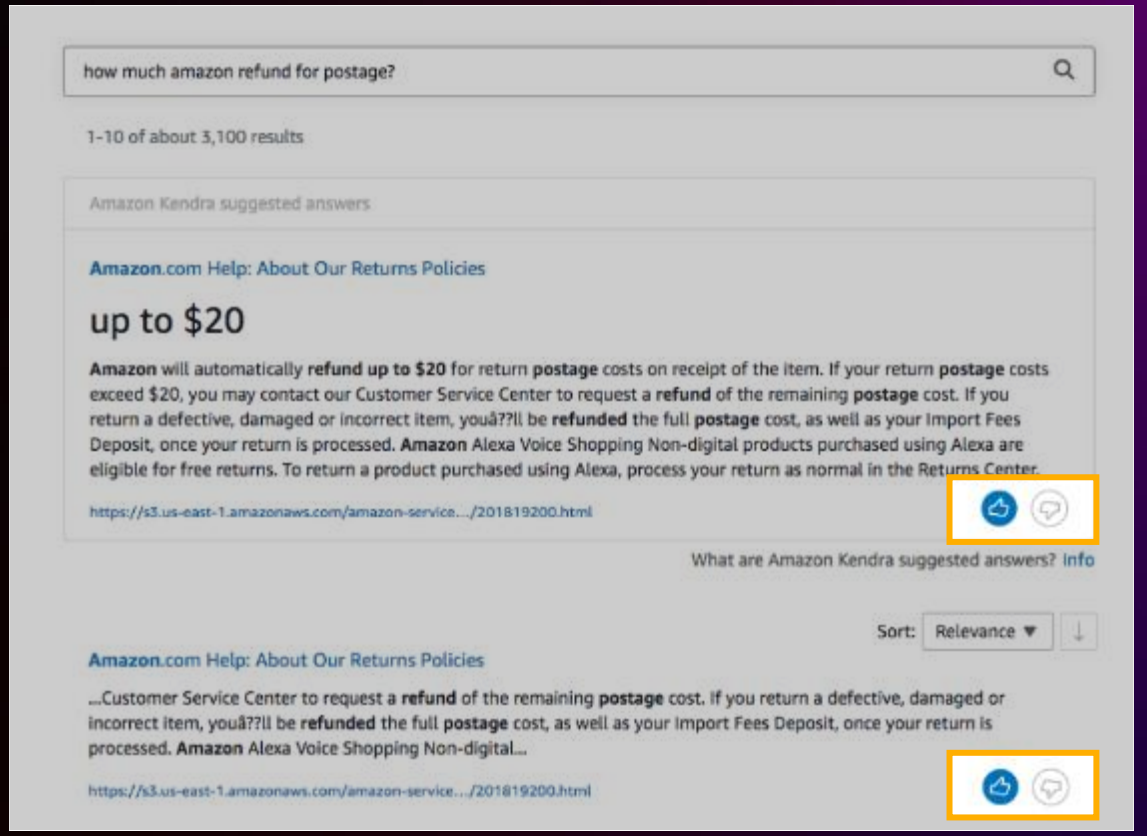
Domain expertise

Continuous improvement

Amazon Kendra improves automatically over time

Captures click-through and user feedback

Retrains models periodically



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Native connectors

Natural language queries

NLU and ML core

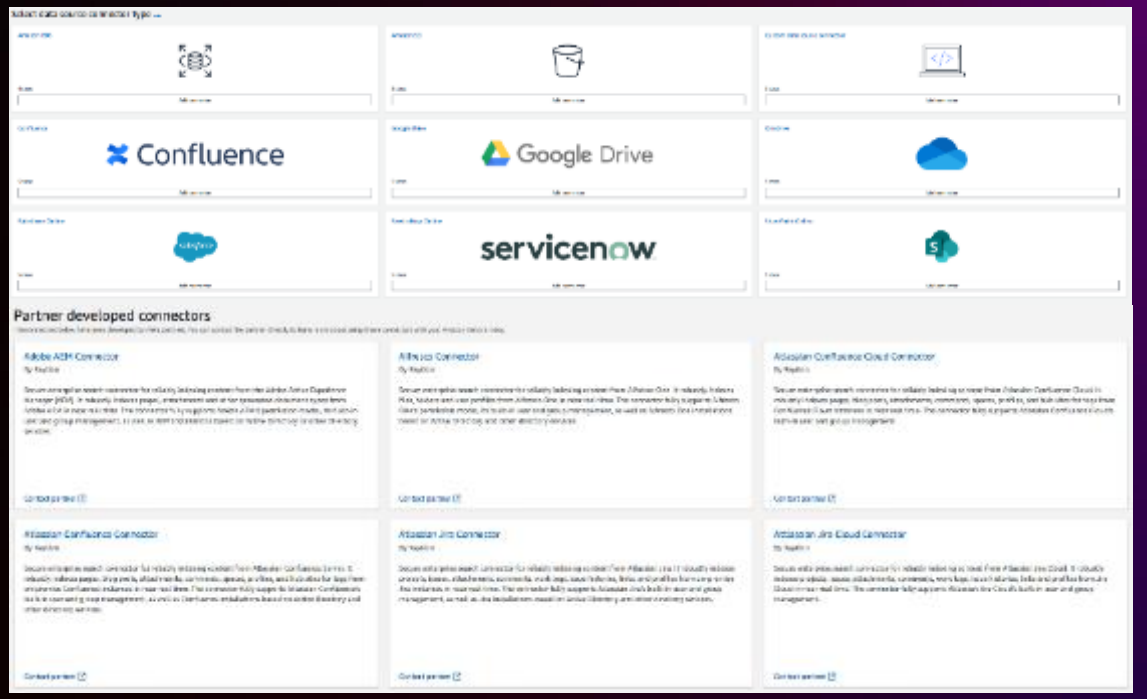
Domain expertise

Continuous improvement

Native and partner connectors

Popular data sources including Microsoft SharePoint, Atlassian Confluence and Jira, Adobe Experience Manager, ServiceNow, and Salesforce

Add credentials, then point and shoot



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Secure search

Natural language queries

NLU and ML core

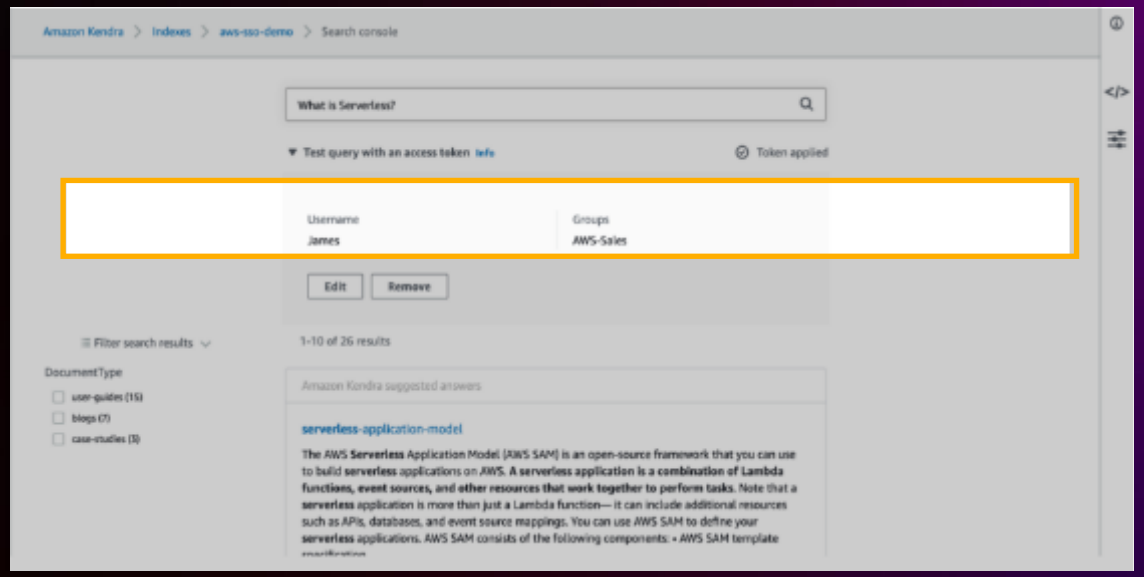
Native and partner connectors

Domain expertise

Continuous improvement

Secure search

Highly secure



Data encrypted in transit and at rest

Token-based user access control

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Intelligent Search case studies



Uses Amazon Kendra to help scientists find the information they need by handling natural language queries quickly and accurately.



AWS helps to reduce agent training by 3–5 days and increases agent call handling volume. Magellan Rx was able to lower the average call time by 9–15 seconds, which saves over 4,000 hours on over 2.2 million calls per calendar year.

aws

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Identity Verification

Costs, risk, and liability from fraud-based events are on the rise

74% Organizations target of scams in excess of $50K [1]

140% Increase in fraud attacks since 2020 [2]

282% Growth in account takeover fraudulent activities [3]



[1] LexisNexis True Cost of Fraud 2020
[2] Sift Digital Trust and Safety Index, 2020
[3] JPMC Payments Fraud Control Report 2021

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Identity verification use cases

ENABLE SECURE AND COMPLIANT DIGITAL EXPERIENCES



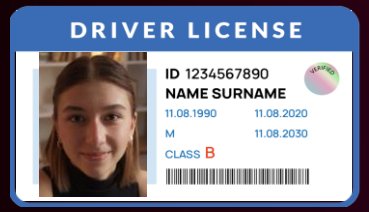
Customer onboarding & verification



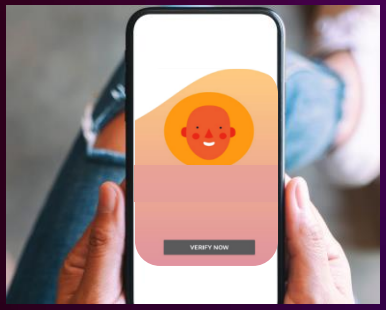
Online proctoring



Gig economy verification



Event & airport check-ins

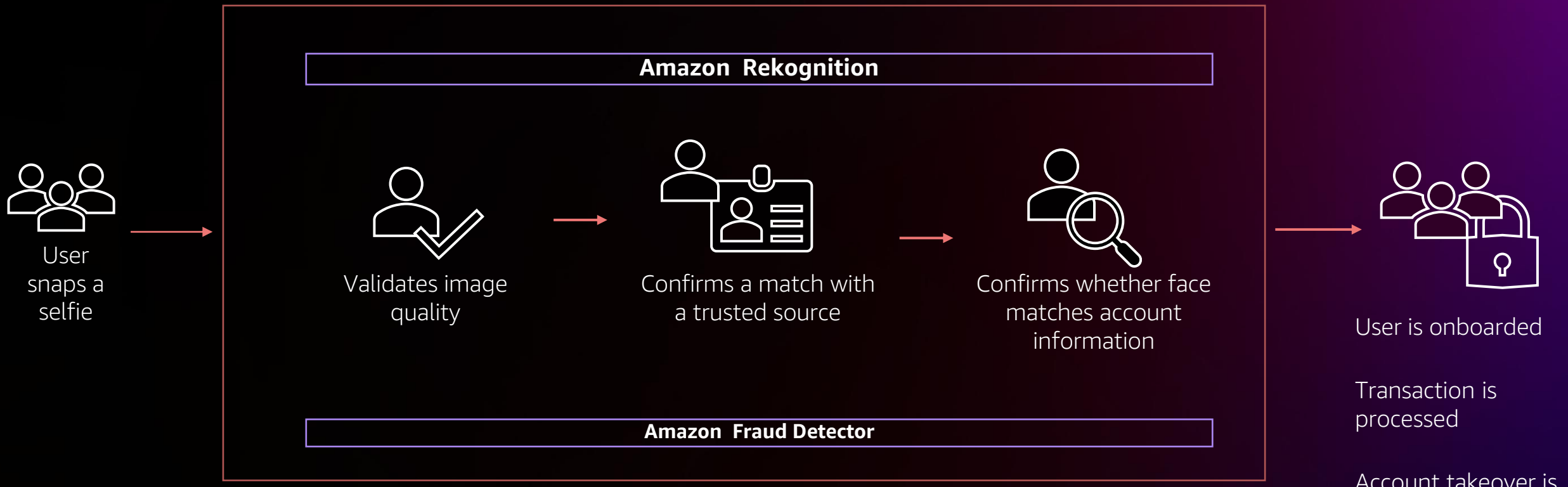


User challenges

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Identity verification on AWS



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Identity Verification case studies

AELLA CREDIT

Image analysis to verify an individual's identity in real-time without human intervention for instant loan approvals.

Bachpan Bachao Andolan

Online image and information match against reports of abandoned and missing children.

Lower false-positive rate and daily interception of 63,000 images and videos.

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Content Moderation

Customers expect inclusion and safety

50% of people create content at least once daily[1]

40% of consumers disengage after one exposure to toxic UGC[2]

70% of consumers agree that brands are responsible to moderate UGC[2]

[1] Stackla, Customer Survey
[2] BusinessWire, Customer Survey



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Content Moderation

CREATE SAFE ONLINE ENVIRONMENTS, PROTECT YOUR BRAND, AND MINIMIZE MODERATION COSTS



Gaming



Social media



E-commerce



Advertising

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Content moderation on AWS



Users upload content

AWS AI SERVICES

IMAGE — Amazon Rekognition

VIDEO — Amazon Rekognition

TEXT — Amazon Translate

AUDIO — Amazon Transcribe

Content is labeled

Content is redacted

Transcript is generated

Amazon Comprehend

Amazon A2I



Moderated content flows back

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Content Moderation case studies

DeNA

Pococha voice community

Identification and redaction of words not recognized by standard speech-to-text services

Higher detection accuracy and faster moderation response times

FLIPBOARD

Content recommendation platform

Automatically detect content violations in 1.2 billion images and videos yearly

Lower false-positive rate and daily interception of 63,000 images and videos

MOBISOCIAL

Gaming and streaming platform

Flagging of non-compliant images and videos

Manual moderation reduced by 95% with increased accuracy and scalability

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Making it real

AWS

- AWS Professional Services
- Amazon ML Solutions Lab

AWS Partner

- System Integrators
- ISVs

Do it yourself

- Amazon SageMaker
- AI Services
- SageMaker Canvas
- SageMaker Jumpstart
- AI/ML Solutions

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The AWS AI/ML stack

BROADEST AND MOST COMPLETE SET OF MACHINE LEARNING CAPABILITIES

AI SERVICES

SPECIALIZED

BUSINESS PROCESSES
- Amazon Personalize
- Amazon Forecast
- Amazon Fraud Detector

SEARCH
- Amazon Kendra

CONVERSATION
- Amazon Lex
- Amazon Transcribe Call Analytics
- Contact Lens
- Voice ID

CODE + DEVOPS
- Amazon CodeGuru
- Amazon CodeWhisperer
- Amazon DevOps Guru

INDUSTRIAL
- Amazon Monitron
- Amazon Lookout for Equipment
- Amazon Lookout for Vision

HEALTH
- Amazon HealthLake
- Amazon Comprehend Medical
- Amazon Transcribe Medical

CORE

TEXT
- Amazon Translate
- Amazon Comprehend

SPEECH
- Amazon Polly
- Amazon Transcribe

VISION
- Amazon Textract
- Amazon Rekognition
- AWS Panorama

ML SERVICES

SAGEMAKER CANVAS
No-code ML for business analysts

SAGEMAKER STUDIO LAB
Learn ML

SAGEMAKER GROUND TRUTH
Label data

SAGEMAKER STUDIO | RSTUDIO

Prepare data | Store features | Detect bias | Build with notebooks | Train models | Tune parameters | Deploy in production | Explain predictions | Manage & monitor

CI/CD

SAGEMAKER EDGE MANAGER
Manage edge devices

ML FRAMEWORKS & INFRASTRUCTURE

PyTorch, Apache MXNet, TensorFlow | Amazon EC2 | CPUs | GPUs | AWS Inferentia | AWS Trainium | Habana Gaudi | FPGA

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AI Services

EASILY ADD INTELLIGENCE TO YOUR BUSINES APPLICATIONS

SPECIALIZED

BUSINESS PROCESSES
Amazon Personalize
Amazon Forecast
Amazon Fraud Detector

INDUSTRIAL
Amazon Monitron
Amazon Lookout for Equipment
Amazon Lookout for Vision

HEALTH
Amazon HealthLake
Amazon Comprehend Medical
Amazon Transcribe Medical

SEARCH
Amazon Kendra

CONVERSATION
Amazon Lex
Amazon Transcribe Call Analytics
Contact Lens
Voice ID

CODE + DEVOPS
Amazon CodeGuru
Amazon CodeWhisperer
Amazon DevOps Guru

CORE

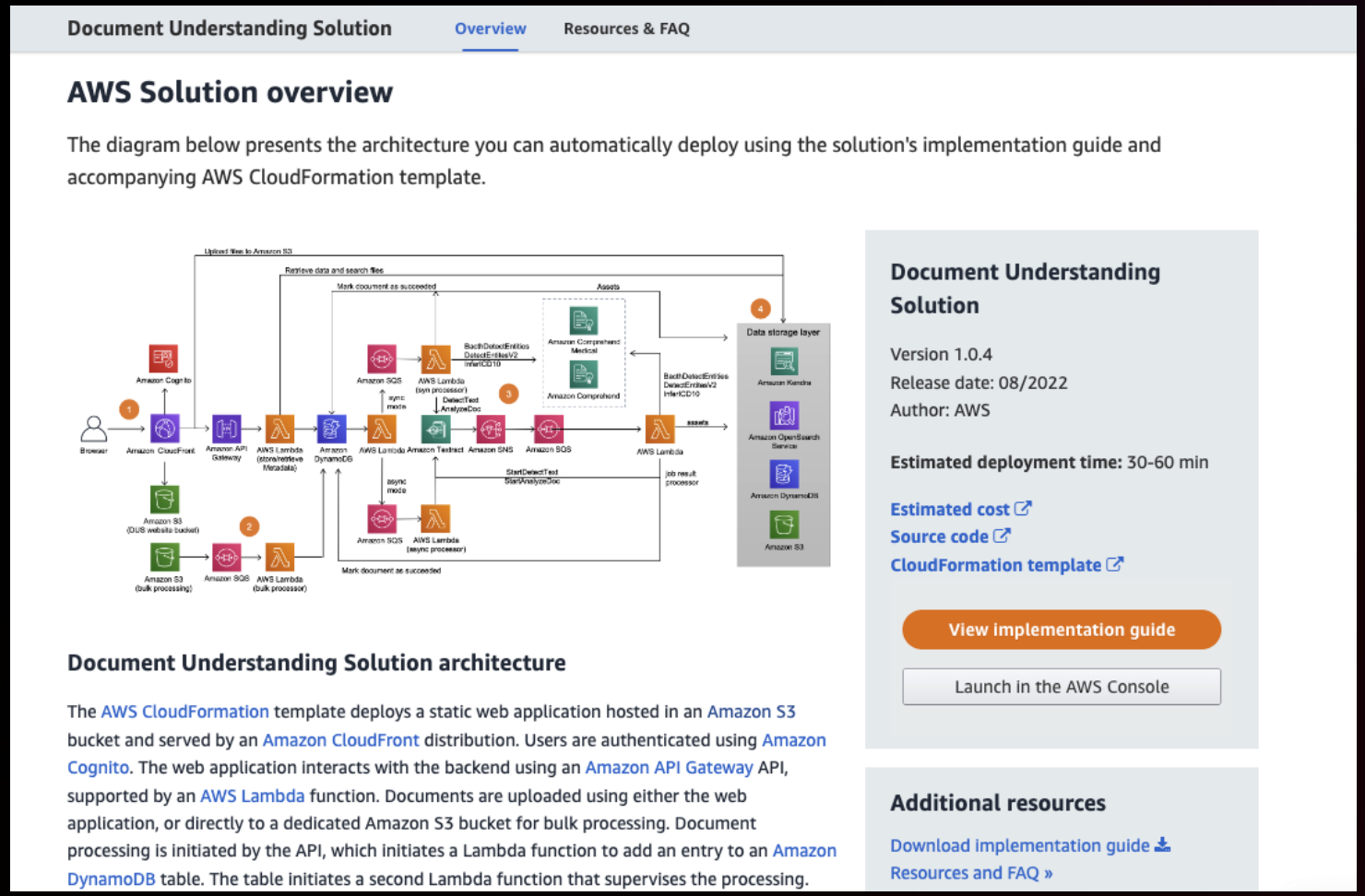
TEXT
Amazon Translate
Amazon Comprehend

SPEECH
Amazon Polly
Amazon Transcribe

VISION
Amazon Textract
Amazon Rekognition
AWS Panorama

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AWS AI/ML Solutions Library - Solutions



Document Understanding Solution | Overview | Resources & FAQ

AWS Solution overview

The diagram below presents the architecture you can automatically deploy using the solution's implementation guide and accompanying AWS CloudFormation template.

Document Understanding Solution architecture

The AWS CloudFormation template deploys a static web application hosted in an Amazon S3 bucket and served by an Amazon CloudFront distribution. Users are authenticated using Amazon Cognito. The web application interacts with the backend using an Amazon API Gateway API, supported by an AWS Lambda function. Documents are uploaded using either the web application, or directly to a dedicated Amazon S3 bucket for bulk processing. Document processing is initiated by the API, which initiates a Lambda function to add an entry to an Amazon DynamoDB table. The table initiates a second Lambda function that supervises the processing.

Document Understanding Solution

Version 1.0.4
Release date: 08/2022
Author: AWS

Estimated deployment time: 30-60 min

Estimated cost
Source code
CloudFormation template

View implementation guide

Launch in the AWS Console

Additional resources

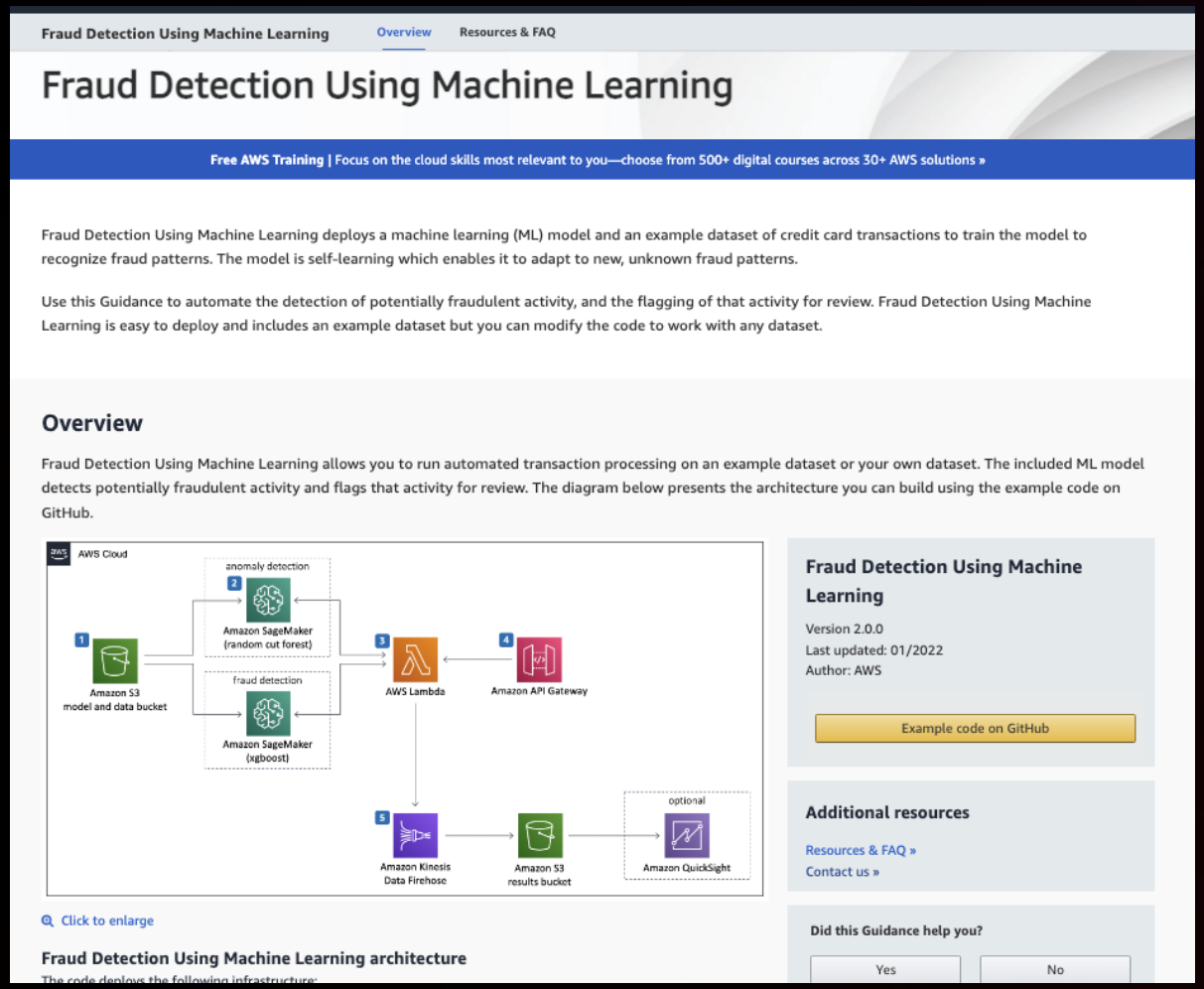
Download implementation guide
Resources and FAQ »

- QnABot on AWS
- Improving Forecast Accuracy with Machine Learning
- Content Localization on AWS
- Content Analysis on AWS
- Document Understanding Solution
- MLOps Workload Orchestrator
- Media Insights on AWS
- Discovering Hot Topics Using Machine Learning Media2Cloud
- Maintaining Personalized Experiences with Machine Learning
- Streaming Data Solution for Amazon MSK
- Streaming Data Solution for Amazon Kinesis

https://aws.amazon.com/solutions/ai-ml/

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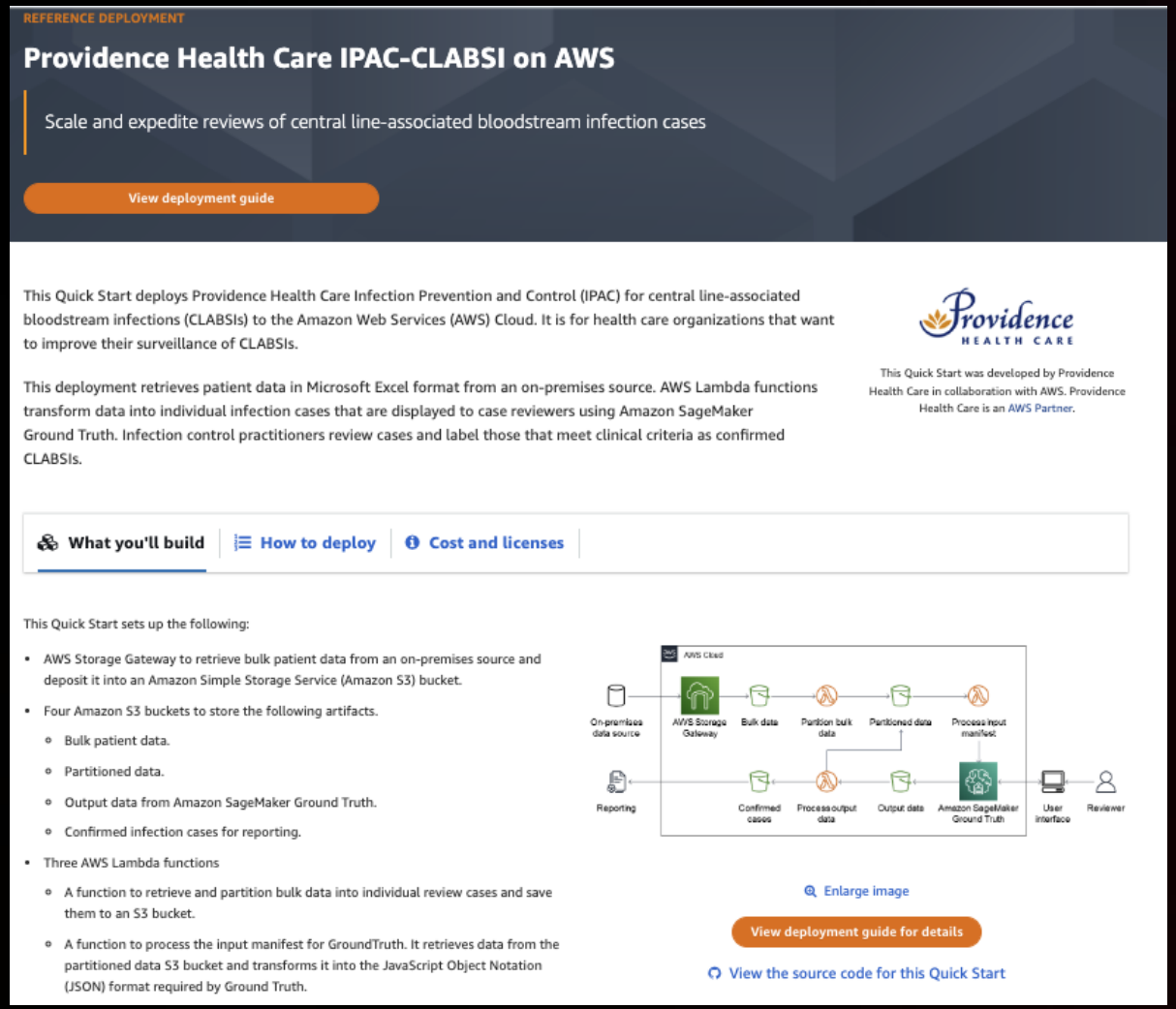
AWS AI/ML Solutions Library – Guidance



- Guidance for Contextual Intelligence for Advertising on AWS
- AI Powered Speech Analytics for Amazon Connect
- Photo Search on AWS
- Liveness Detection Framework
- Serverless Bot Framework
- Text Analysis with Amazon OpenSearch Service and Amazon Comprehend
- Predictive Segmentation Using Amazon Pinpoint and Amazon SageMaker
- Predictive Maintenance Using Machine Learning
- Fraud Detection Using Machine Learning
- Predictive User Engagement

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AWS AI/ML Solutions Library – Partner Guidance



REFERENCE DEPLOYMENT

Providence Health Care IPAC-CLABSI on AWS

Scale and expedite reviews of central line-associated bloodstream infection cases

View deployment guide

This Quick Start deploys Providence Health Care Infection Prevention and Control (IPAC) for central line-associated bloodstream infections (CLABSIs) to the Amazon Web Services (AWS) Cloud. It is for health care organizations that want to improve their surveillance of CLABSIs.

This deployment retrieves patient data in Microsoft Excel format from an on-premises source. AWS Lambda functions transform data into individual infection cases that are displayed to case reviewers using Amazon SageMaker Ground Truth. Infection control practitioners review cases and label those that meet clinical criteria as confirmed CLABSIs.

Providence HEALTH CARE

This Quick Start was developed by Providence Health Care in collaboration with AWS. Providence Health Care is an AWS Partner.

What you'll build | How to deploy | Cost and licenses

This Quick Start sets up the following:

- AWS Storage Gateway to retrieve bulk patient data from an on-premises source and deposit it into an Amazon Simple Storage Service (Amazon S3) bucket.
- Four Amazon S3 buckets to store the following artifacts.
  - Bulk patient data.
  - Partitioned data.
  - Output data from Amazon SageMaker Ground Truth.
  - Confirmed infection cases for reporting.
- Three AWS Lambda functions
  - A function to retrieve and partition bulk data into individual review cases and save them to an S3 bucket.
  - A function to process the input manifest for GroundTruth. It retrieves data from the partitioned data S3 bucket and transforms it into the JavaScript Object Notation (JSON) format required by Ground Truth.

Enlarge image

View deployment guide for details

View the source code for this Quick Start

- Amazon SageMaker Autopilot for Snowflake
- Darktrace vSensor
- DataRobot AutoML 7.1
- Providence Health Care IPAC-CLABSI
- Quantiphi Real-Time Call Center Analytics
- Amazon SageMaker for Tableau
- Industrial Machine Connectivity
- InterSystems IRIS
- Amazon SageMaker with Guardrails
- IBM Cloud Pak for Data
- Utility Meter Data Analytics
- Amazon Lex Chatbot With Amazon Kendra
- Hail
- NVIDIA Clara Train SDK
- Deloitte TrueVoice
- Axomo
- Data Lake with SnapLogic
- Predictive Data Science with Amazon SageMaker and a Data Lake
- eGain Solve

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SageMaker Canvas Use Cases

VAST ARRAY OF USE CASES ACROSS DIFFERENT BUSINESS FUNCTIONS, OR VERTICALS



Sales and Marketing

1. Sales conversion
2. Sales forecasting
3. Propensity to churn
4. Customer lifetime value prediction
5. Marketing mix modeling



Finance and Accounting

1. Credit risk scoring
2. Delayed payments prediction
3. Fraud detection
4. Portfolio optimization
5. Account payables automation



Operations and Logistics

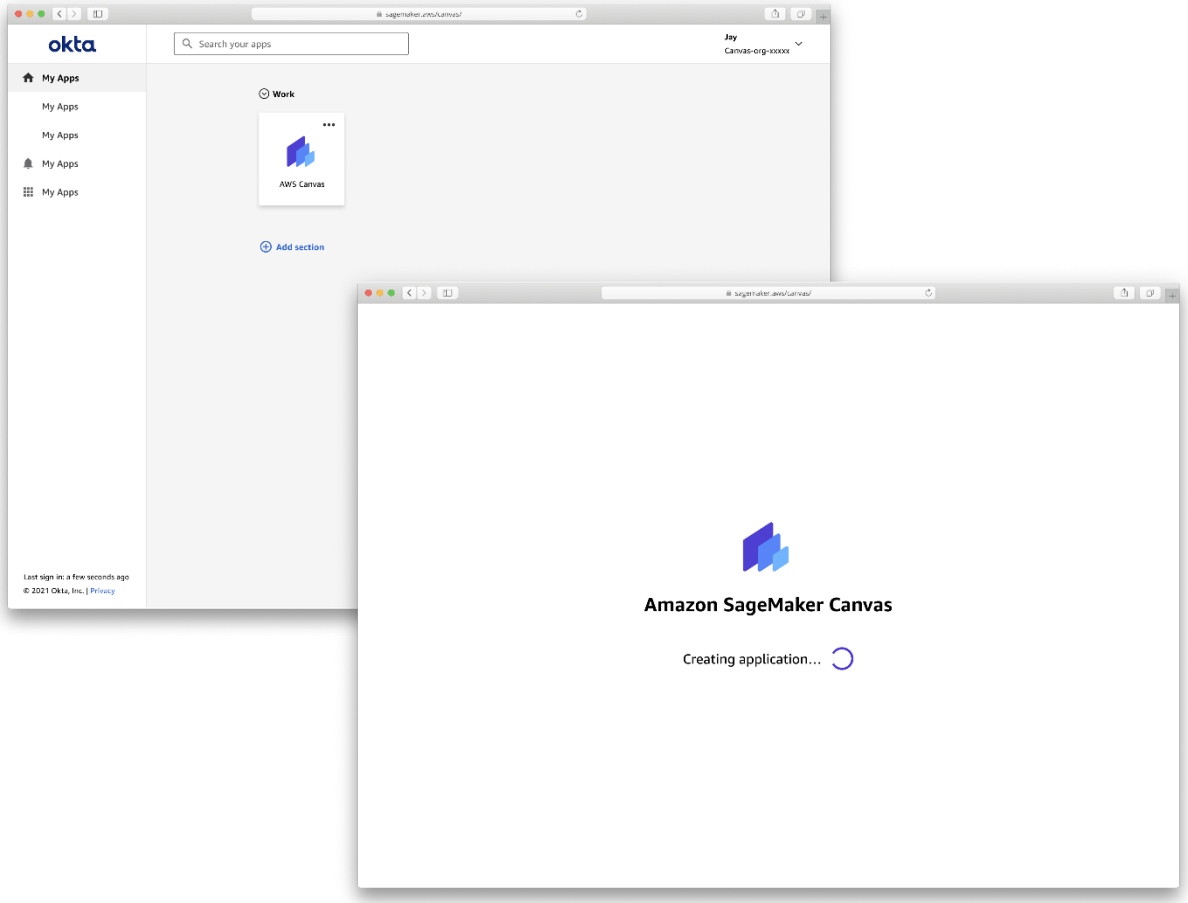
1. Demand forecasting
2. Inventory planning and scheduling
3. Delivery time forecasting
4. Predictive Maintenance

and many more…

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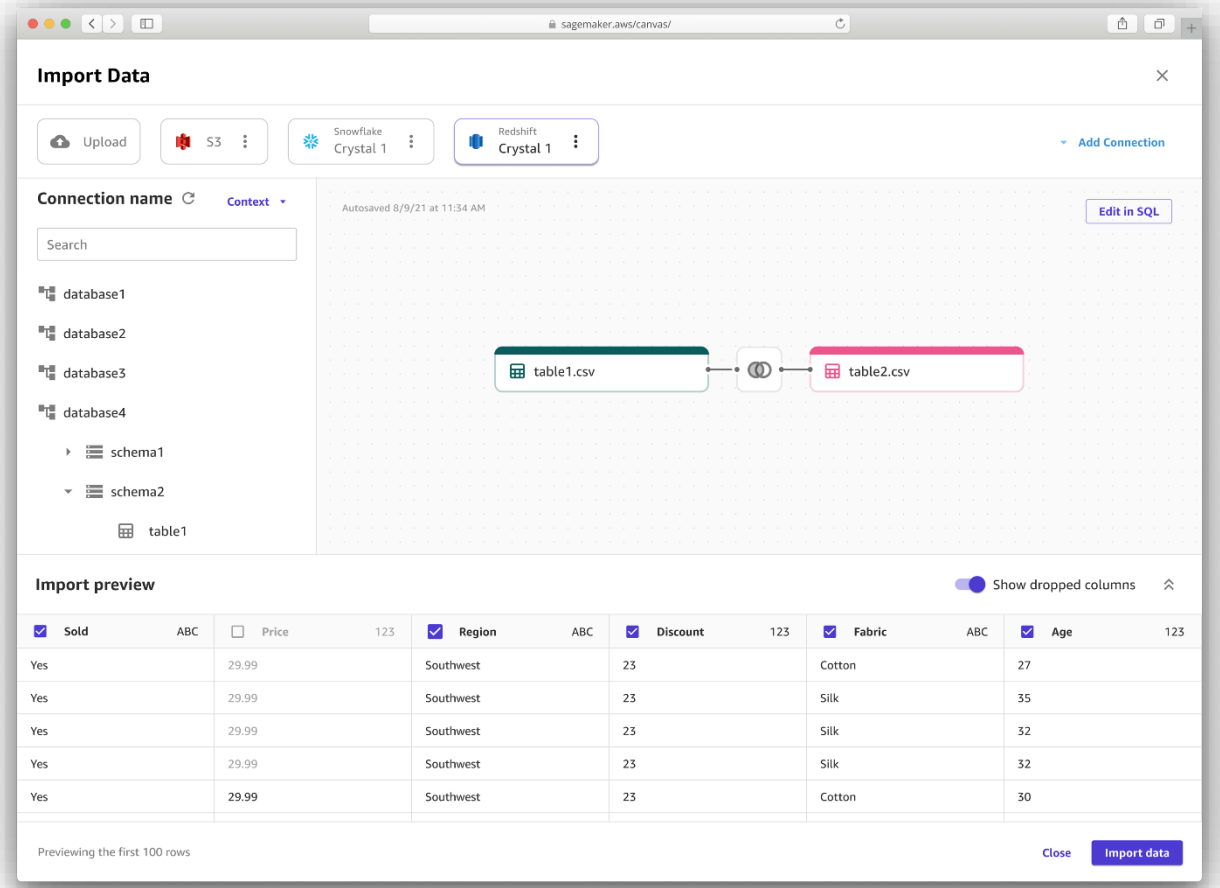
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Self-service access to a business-friendly tool for Machine Learning, outside of the AWS console



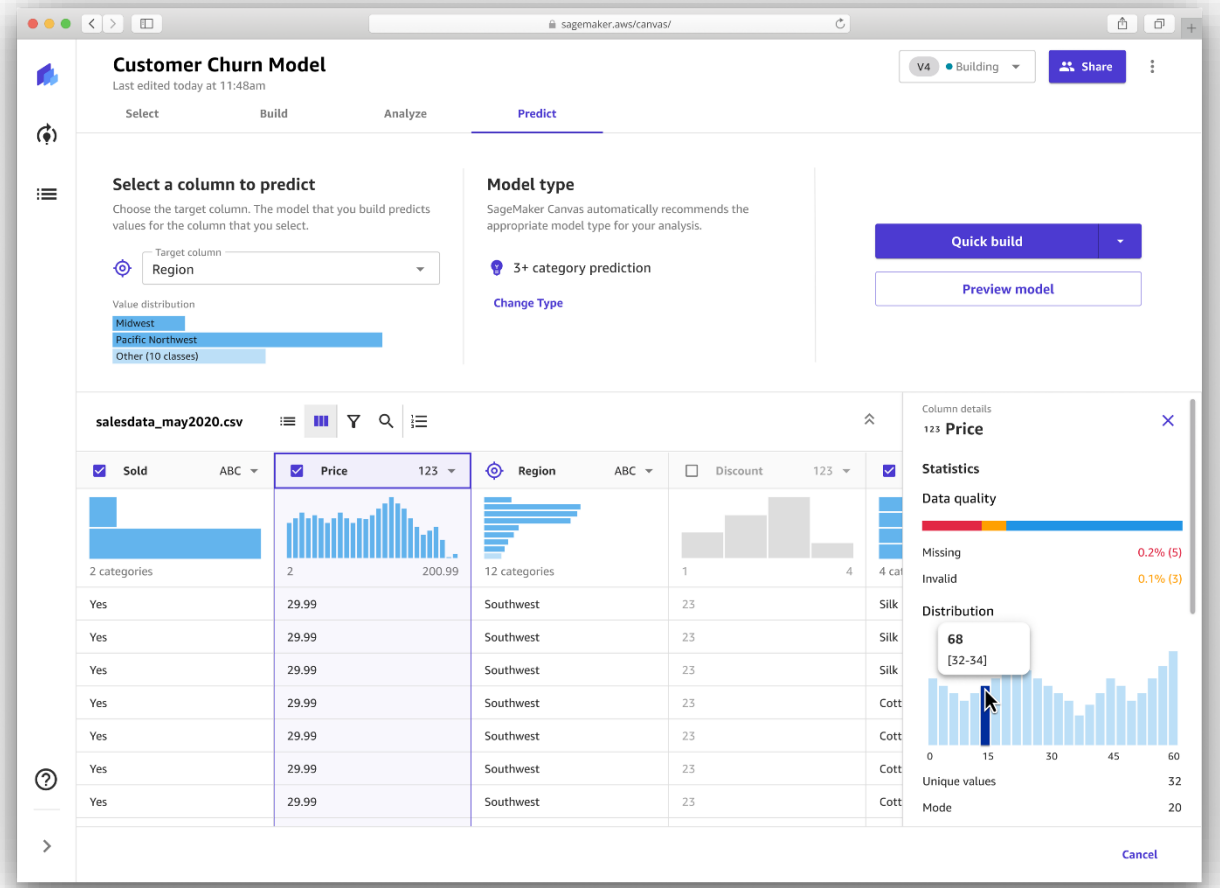
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Combine datasets from various sources like local disk, Amazon S3, Amazon RedShift, and Snowflake



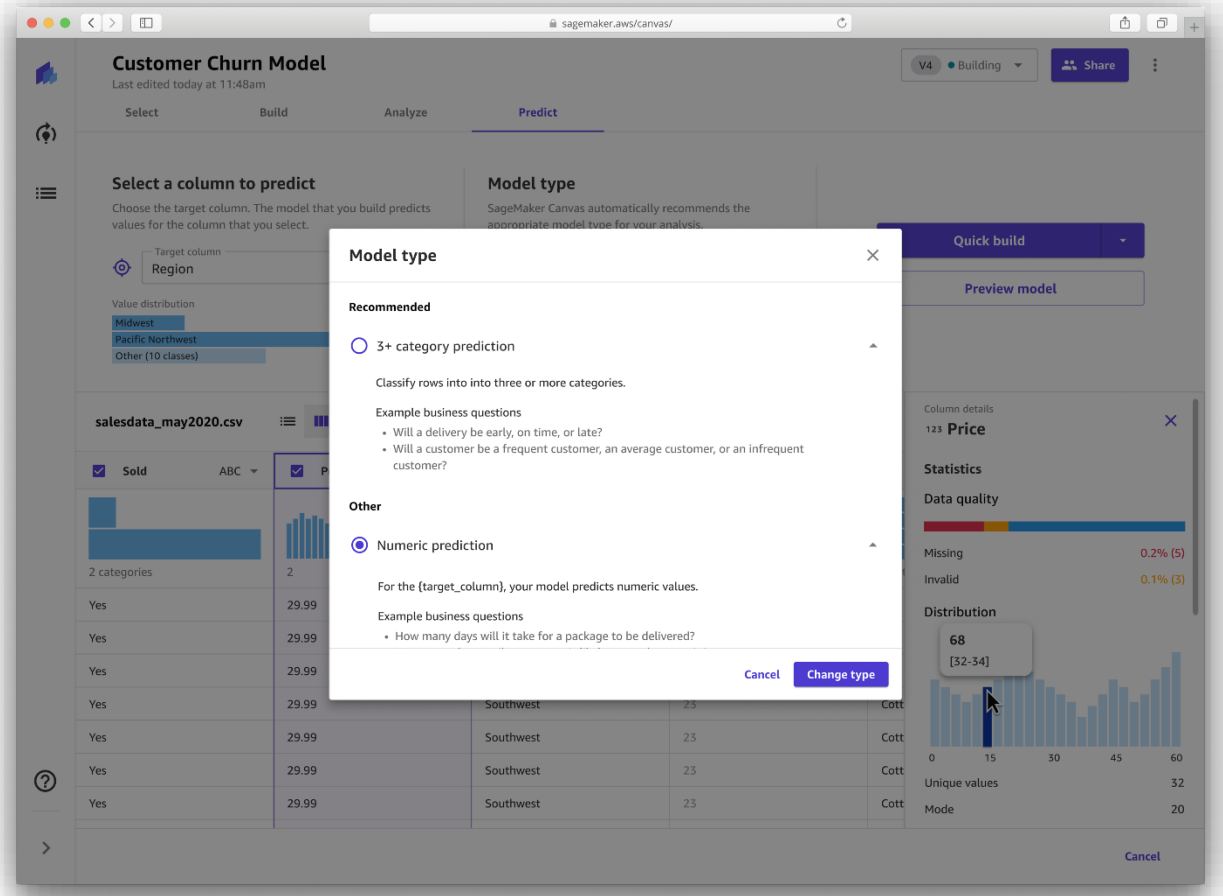
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Quickly understand and prepare your data via a visual interface



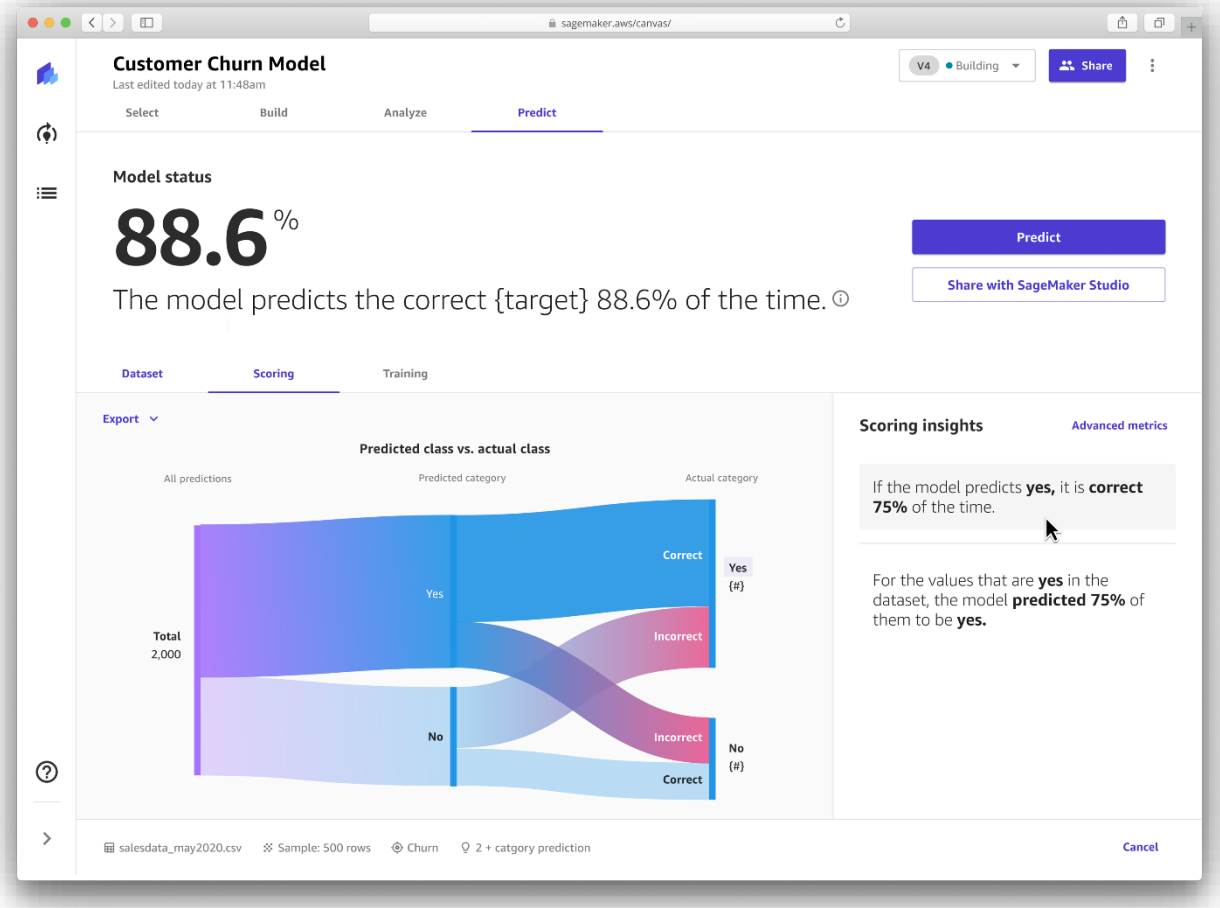
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Automatically build an accurate ML model for your dataset



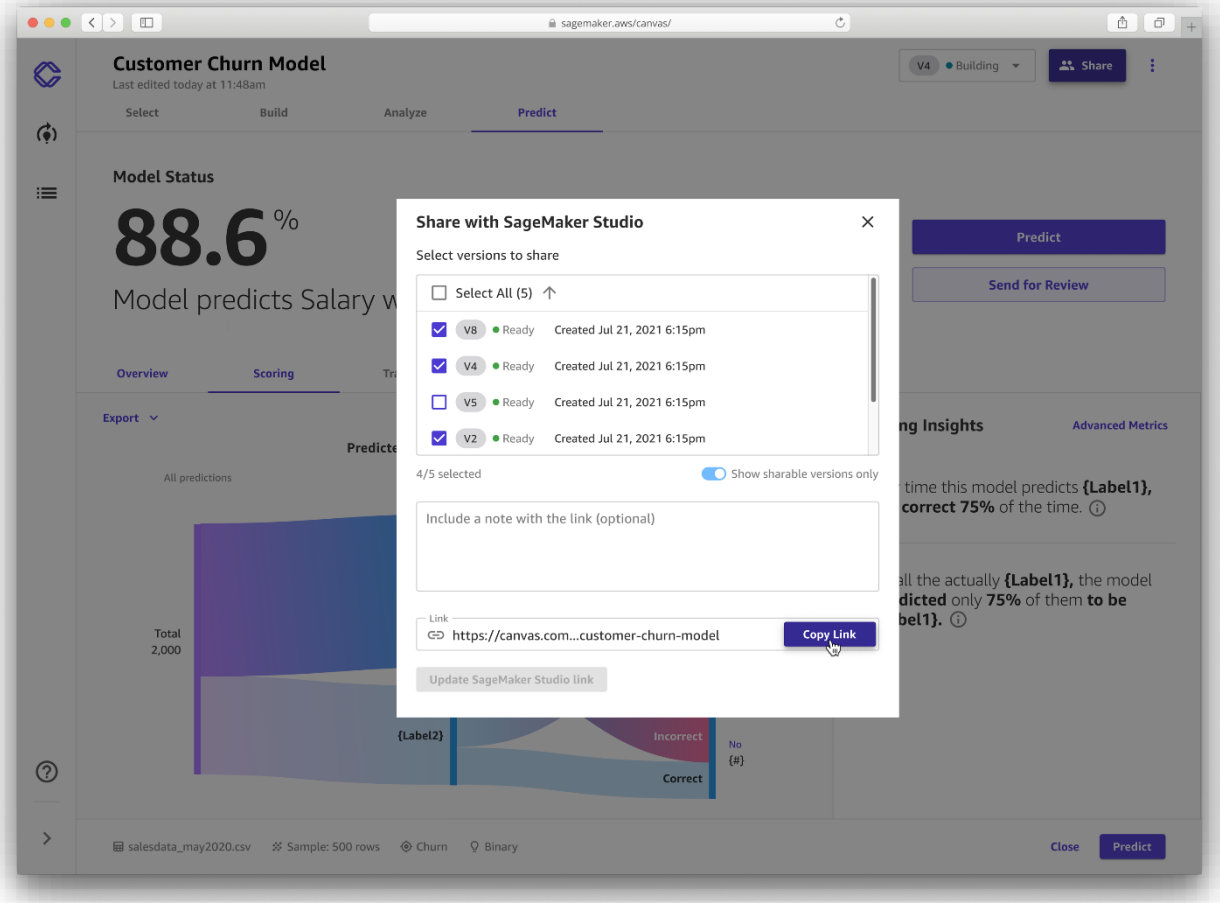
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Get the first ML model in minutes. Review advanced metrics and feature importance to understand and explain predictions



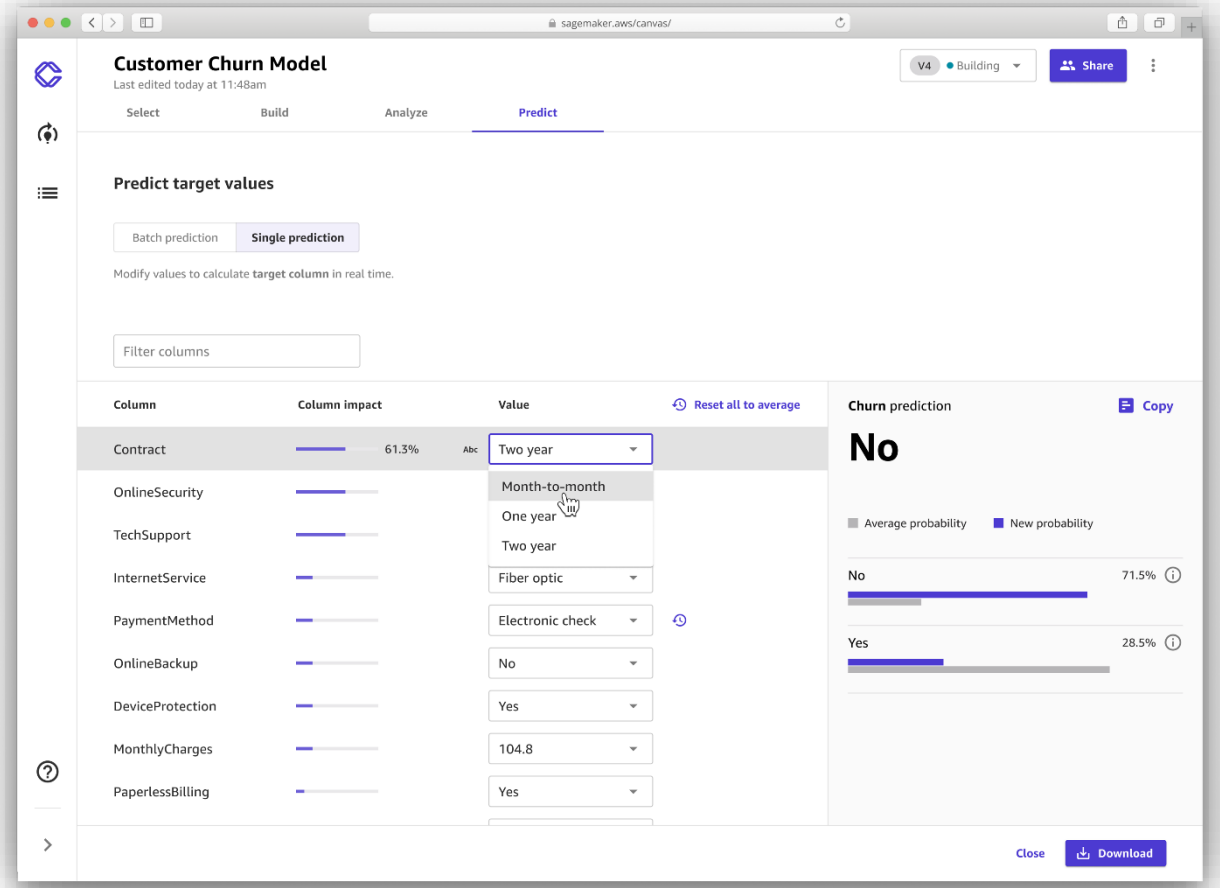
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Easily share your models with data scientists to get feedback



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Run what-if scenarios, or get predictions on an entire dataset



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Related sessions

KEYNOTES & LEADERSHIP SESSIONS

KEY003 – Swami Sivasubramanian Keynote – Wed 8:30AM

AIM217-L – Innovate with AI/ML to transform your business – Wed 1:00PM

INTELLIGENT DOCUMENT PROCESSING

AIM204 – Automate insurance document processing with AI – Mon 4:00PM

AIM334 – Using AI to process healthcare data with intelligent document processing – Mon 4:00PM

AIM311 – Use machine learning to automate and process documents at scale – Tue 2:00PM

AIM202 – Pennymac automates mortgage document processing using AI – Wed 9:15AM

AIM214 – Black Knight accelerates mortgage processing workflows with AWS – Wed 4:00PM

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Related sessions

CONTACT CENTER INTELLIGENCE

AIM402 – Extract AI-driven customer insights using Post-Call Analytics – Mon 4:00PM

AIM317 – AI-powered contact centers are key for successful organizations – Tue 2:45PM

AIM307 – JPMorgan Chase real-time agent assist for contact center productivity – Wed 11:30AM

CONVERSATIONAL AI

AIM403 – Build human-like customer experiences with conversational AI – Tue 11:45AM

AIM332 – WaFd Bank delivers enhanced self-service with AWS conversational AI – Tue 1:15PM

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Related sessions

INTELLIGENT SEARCH

AIM304 – Get the most out of your data with ML-powered search – Tue 5:00PM

AIM340 – Transform your business with intelligent search powered by Amazon Kendra – Wed 1:45PM

PERSONALIZATION

AIM203 – Boost user engagement with Amazon Personalize – Mon 11:30AM

AIM312 – Build a custom recommendation engine in 2 hours with Amazon Personalize – Mon 1:00PM

AIM318 – Taking personalization to the next level with Amazon Personalize – Tue 4:15PM

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Related sessions

CONTENT MODERATION

AIM306 – Automate content moderation and compliance with AI – Mon 12:15PM

AIM316 – Build a content moderation workflow to protect users, brands & information – Tue 2:45PM

AI FOR CODING & DEVOPS

AIM309 – Transforming DevOps with AI - Mon 2:30PM

AIM325 – Build applications faster with an ML-powered coding companion – Tue 3:30PM

AI SERVICES

AIM001 – Introduction to AI Services (AWS Demo Theatre) - Wed 5:30PM

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