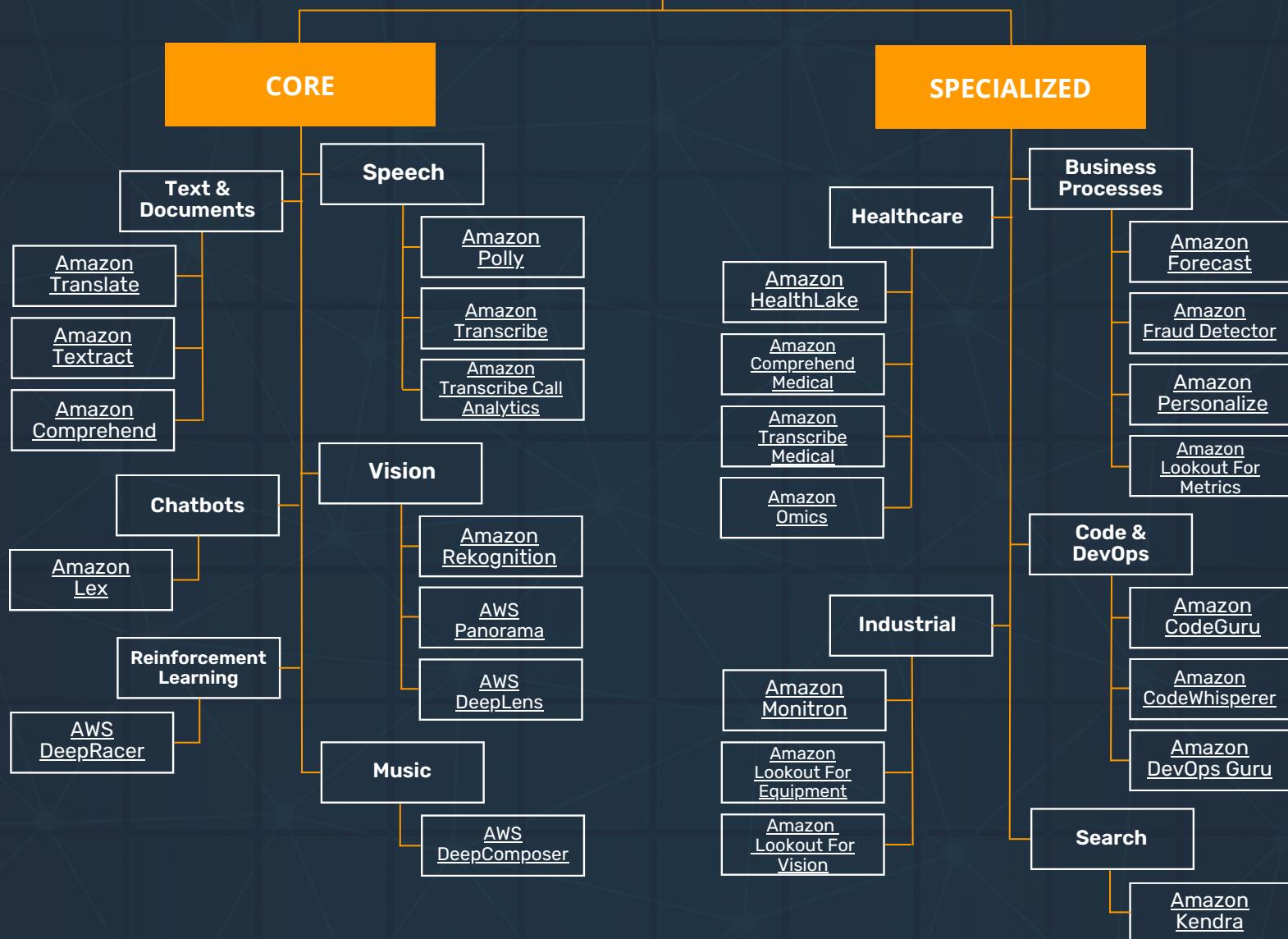


COMPLETE GUIDE TO AWS AI SERVICES **2023 EDITION**

AWS AI SERVICES



AMAZON TRANSLATE

Text & Documents

A text translation service that provides translation on demand.

- **Multilingual user experiences**
 - Translate company-authored content (meetings/posts/emails)
- **Process incoming data in many languages**
 - Analyze text (social media and news feeds)
 - Search for information (eDiscovery cases)
- **Language-independent processing**
 - Extract sentiment and key phrases from social media
 - Make subtitles and live captioning available

AMAZON TEXTRACT

Text & Documents

Adds document text detection and analysis to your applications.

- **Create libraries of text** using intelligent search in images and PDF files
- **Extract text as words and lines** for natural language processing (NLP)
- **Enable text and tabular data extraction** from financial, research, and medical documents
- **Automate data capture** to automatically extract data into a usable format
- **Automate document classification** into various classes

AMAZON COMPREHEND

Text & Documents

Uses natural language processing (NLP) to extract insights about the content of documents.

- **Use sentiment analysis** to determine how your customers feel
 - Find out if they feel positive, negative, neutral, or mixed about a specific topic
- **Find documents about a subject**
 - Discover the topics that your customers are talking about and message boards and determine the people, places, and things that they associate with the topic

AMAZON LEX

Chatbots

A service for building conversational interfaces into applications using voice and text, provides functionality and flexibility of natural language understanding (NLU) and automatic speech recognition (ASR).

- **No deep learning expertise** is necessary to create a bot
- **Amazon Lex dynamically adjusts** the responses in the conversation
- **Build, test, and publish** your text or voice chatbot using AWS console
- **Add the conversational interfaces** to bots on mobile devices, web applications, and chat platforms

AMAZON DEEPRACER

Reinforcement Learning

A reinforcement learning-enabled autonomous 1/18th-scale vehicle with supporting services in the AWS Machine Learning ecosystem.

- Experience the thrill of the **race in the real-world**
- **Train, test, and iterate** quickly and easily on the track in the AWS DeepRacer 3D racing simulator
- **Compete in the world's first global, autonomous racing league**, to race for prizes and glory and a chance to advance to the Championship Cup

AMAZON POLLY

Speech

A Text-to-Speech (TTS) cloud service that converts text into lifelike speech.

- **Develop speech-enabled applications** using one of human-like text-to-speech voices that increase engagement and accessibility
- **Build mobile applications** such as newsreaders, games, eLearning platforms, accessibility applications for visually impaired people

AMAZON TRANSCRIBE

Speech

An automatic speech recognition service that uses machine learning models to convert audio to text.

- **Filter content** to ensure customer privacy or audience-appropriate language
- Improve accuracy for your specific use case with a **language customization**
- Analyze content in **multi-channel audio**
- **Partition the speech** of individual speakers

AMAZON TRANSCRIBE CALL ANALYTICS

Speech

A machine learning-powered API for generating highly accurate call transcripts and extracting real-time conversation insights.

- **Classify conversations** based on phrases, sentiment, non-talk time, and interruptions
- Perform **sentiment analysis** based on specific phrases
- **Detect and redact sensitive information** from both the audio and the text in real-time or post-call

AMAZON RECOGNITION

Vision

A machine learning product that makes it easy to add image and video analysis to your applications.

- **Identify** objects, people, text, scenes, and activities
- Detect any **inappropriate content**
- Perform highly accurate **facial analysis** and face search capabilities
- Detect, analyze, and compare faces for a wide variety of use cases, including user verification, cataloging, people counting, and public safety

AWS PANORAMA

Vision

A service that brings computer vision to your on-premises camera network.

- Analyze the collected data over time, **detect anomalies** in the data, and predict future behavior
- **Monitor** an assembly line's output to identify parts that don't conform to requirements. Highlight images of nonconformant parts with text and a bounding box.
- Monitor off-limits areas at an industrial site and receive site **safety alerts**
- Collect training and test **data on the edge**

AWS DEEPLENS

Vision

A deep learning-enabled video camera.

- **Perform local inference** against deployed models
- Learn and explore the **latest AI tools** and technology for developing computer vision applications based on a deep learning model
- **Train a convolutional neural network** (CNN) model and then deploy your computer vision application project containing the model to the AWS DeepLens device

AWS DEEPCOMPOSER

Music

An AI-enabled music keyboard that provides you with a hands-on learning experience to explore generative learning.

- **Generate a composition** by choosing one of the sample melodies and a pretrained model
- **Experiment with generative AI models** in a musical setting by creating and transforming musical inputs and accompaniments
- Change the instruments, download your new composition, and **share the results** on SoundCloud
- Record a **custom melody** using either the console-based keyboard or the AWS DeepComposer keyboard to flex your creativity

AMAZON HEALTHLAKE

Healthcare

A Fast Healthcare Interoperability Resources (FHIR)-enabled patient Data Store.

- **Ingest** clinical notes, lab reports, insurance claims
- **Create a complete, chronological view** of each patient's medical history, and structure it in the R4 FHIR standard format
- **Perform SQL-based queries** and use this data to train a machine learning model or create dashboards and data visualizations
- Transform unstructured data using **natural language processing (NLP)** in Amazon Comprehend Medical

AMAZON COMPREHEND MEDICAL

Healthcare

Uses natural language processing (NLP) to detect information such as medical conditions, medications, or Protected Health Information (PHI).

- **Detect entities** from clinical text and link those entities to standardized concepts in common medical ontologies
- **Manage and easily access** medical information that doesn't fit into traditional forms
- **Optimize the matching process** for enrolling patients into clinical trials
- Expand **medical analytics** to include unstructured documents such as clinical notes

AMAZON TRANSCRIBE MEDICAL

Healthcare

An automatic speech recognition service that makes it easy for you to add medical speech-to-text capabilities to your voice-enabled applications.

- Perform **accurate medical transcriptions** such as dictation recorders and scribes in an efficient manner
- **Transcribe physician-patient conversations** for clinical documentation, phone calls in pharmacovigilance, or telehealth consultations
- Address **both batch workloads and real-time speech-to-text** applications

AMAZON OMICS

Healthcare

A service that helps bioinformaticians, researchers, and scientists to store, query, analyze, and generate insights from genomics and other biological data.

- Securely store your genomics data and then query or combine it with medical history data for **better diagnoses and personalized treatment plans**
- **Protect patient privacy**, control and log data access, as well as how the data has been used in analyses
- Support **large population data analyses** with simplified billing and new collaboration tools

AMAZON MONITRON

Industrial

An end-to-end system that detects abnormal behavior in industrial machinery enabling you to implement predictive maintenance and reduce unplanned downtime.

- **Automatically detects abnormal behavior** in industrial machineries such as bearings, motors, gearboxes, and pumps without any development work or specialized training
- **Take proactive action** on potential failures and reduce unplanned downtime
- **Analyze the data** for abnormal machine patterns using machine learning, and a companion mobile app to set up the devices and track potential failures in your machinery

AMAZON LOOKOUT FOR EQUIPMENT

Industrial

Uses industrial data from your equipment to detect potential failures so you can take action, such as performing maintenance before a breakdown, to avoid unplanned downtime.

- Find **abnormal equipment behavior** that occurred in the historical data
- Monitoring industrial equipment that detects abnormal equipment behavior and **identifies potential failures**
- Implement **predictive maintenance programs** and identify suboptimal equipment processes

AMAZON LOOKOUT FOR VISION

Industrial

Finds visual defects in industrial products, accurately and at scale.

- **Identify missing components** in an industrial product, such as damage to vehicles or structures, irregularities in production lines
- Process images from IP cameras, **in batch or in real-time**, to quickly and accurately **identify anomalies** like dents, cracks, and scratches
- **Increase production quality** and **reduce costs** by preventing more defects from occurring

AMAZON FORECAST

Business Processes

A fully managed deep learning service for time-series forecasting.

- **Automatically handle missing values** in your datasets
- Forecast automates complex machine learning tasks by **finding the optimal combination** of machine learning algorithms
- Automatically incorporate built-in datasets to improve your model. These datasets are **already feature engineered** and do not require additional configuration

AMAZON FRAUD DETECTOR

Business Processes

A fully managed service that helps you detect suspicious online activities.

- Build **customized fraud-detection models**, add decision logic to interpret the model's fraud evaluations, and assign outcomes such as pass or send for review for each possible fraud evaluation
- **Configure decision logic** to interpret the model's score and assign outcomes for how to deal with each fraud evaluation

AMAZON PERSONALIZE

Business Processes

Real-time personalization and recommendations, based on the same technology used at Amazon.com.

- Add multiple types of **personalized video recommendations** like Top picks for you, More like X, to your streaming app
- Add multiple types of **personalized product recommendations**, like Recommended for you, Frequently bought together, to your retail app
- **Generate batch recommendations** for all users on an email list
- **Create a targeted marketing campaign** by generating segments of users who will most likely interact with items in the catalog

AMAZON LOOKOUT FOR METRICS

Business Processes

A machine learning service that helps you continuously find anomalies in business and operational data based on the same technology used by Amazon.com.

- **Monitor data to find anomalies**
- Find **an anomaly with a severity score** to indicate how unexpected it is, based on the detector's understanding of your data
- Use **historical data** to see how well it works on your data
- Send **anomaly alerts** when high severity anomalies occur

AMAZON CODEGURU

Code & DevOps

Provides intelligent recommendations for improving application performance, efficiency, and code quality.

- **Detect code defects** and unprotected secrets in your code
- **Implementing best practices** to improve the overall quality and maintainability of your code base during the code review stage
- **Perform security analysis** and identify and **prevent complex problems** such as resource leaks

AMAZON CODEWHISPERER

Code & DevOps

An ML-powered service that helps improve developer productivity by generating code recommendations based on their comments in natural language and code in the integrated development environment (IDE).

- Accelerate application development with **automatic code recommendations** based on the code and comments in your IDE
- Create syntactically correct and secure applications with **real-time customized code recommendations** for your projects
- **Generate entire functions and logical code blocks** without having to search for and customize code snippets from the web

AMAZON DEVOPS GURU

Code & DevOps

Generates operational insights using machine learning to help you improve the performance of your operational applications.

- **Improve the performance** and availability of the applications
- **Offload the administrative tasks** associated with identifying operational issues so that you can quickly implement recommendations to improve your application
- **Create proactive insights** to help you avoid operational issues that might affect your application in the future

AMAZON KENDRA

Search

A search service, powered by machine learning, that enables users to search unstructured text using natural language.

- Add **highly secure enterprise search** for your search applications
- Attempt to **understand the context of the question**
- **Search across the data** and go beyond traditional search to return the most relevant word, snippet, or document for your query

Thank you!

The guide is based on
AWS Documentation



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