

# § Machine Learning

## (1) Amazon Rekognition

→ to find obj, ppl, texts, scenes in image & video using ML

→ facial analysis & facial search { ppl counting, verification }

→ on our own DB or in built DB of celebs.

Use cases!

- ① Labelling \*
- ② Content Moderation \*
- ③ Text detection
- ④ Face detection & analysis
- ⑤ Face search & verification
- ⑥ Rating

## Amazon Rekognition – Content Moderation

- Detect content that is inappropriate, unwanted, or offensive (image and videos)
- Used in social media, broadcast media, advertising, and e-commerce situations to create a safer user experience
- Set a **Minimum Confidence Threshold** for items that will be flagged
- Flag sensitive content for manual review in Amazon Augmented AI (A2I)
- Help comply with regulations



## ② Amazon Transcribe

- speech to text
- uses ASR (Automatic Speech Recognition) {deep learning}
- can automatically remove PII (redacted)
- support automatic language identification.

use cases!

- ① transcribe customer service calls. \*
- ② add captioning to YouTube. \*
- ③ generate metadata for media assets to create a fully searchable archive. \*

## ③ Amazon Polly

- text to speech
- create application that talk!

\* 2 features in Polly

- lexicons
- speech synthesis markup language

### ① lexicons

- customize the pronunciation of words with pronunciation lexicons.

lexicons.

Eg: { stylized words → Stéphane → "Stephane"  
          Acronyms AWS = "Amazon Web Service"

- upload these lexicons to use them in synthesize speech operation

## (2) Speech Synthesis Markup Language (SSML)

- emphasize on specific words
- phonetic pronunciation
- include duration & whispers
- changing the speaking style

enabling customizations using this markup language.

→ generating speech from plain text & documents.

## (4) Amazon Translate

- language translate
- localize content for users!

## (5) Amazon Lex + connect

(1) Lex { same technology as Alexa }

(1) ASR

(2) Language understanding

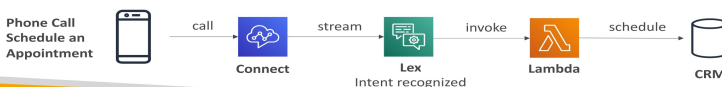
(3) help build chatbots

(2) Connect

(1) Receive calls, contact flow { cloud-based virtual contact center }

(2) integrate with CRM { customer relationship management } systems on AWS

(3) No upfront, 80% cheaper



## ⑧ Amazon Comprehend

→ For NLP

→ fully managed, serverless

→ find insights & relationships in texts

- Analyze text using tokenization
- Automatically organize a coll. of text files by topic.

\* unstructured data → structured

\* sentiment analysis from customer reviews.

\* create & group articles by topic.

## \* Comprehend Medical!

### Amazon Comprehend Medical

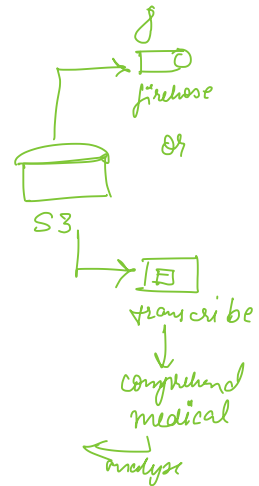


• Amazon Comprehend Medical **detects and returns useful information in unstructured clinical text:**

- Physician's notes
- Discharge summaries
- Test results
- Case notes

• **Uses NLP to detect Protected Health Information (PHI)** – DetectPHI API

• Store your documents in Amazon S3, analyze real-time data with Kinesis Data Firehose, or use Amazon Transcribe to transcribe patient narratives into text that can be analyzed by Amazon Comprehend Medical.



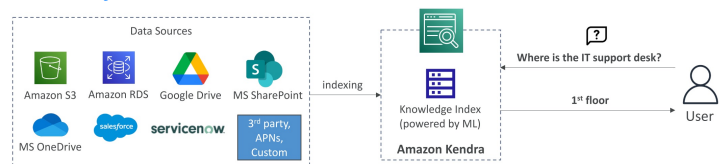
→ fully managed service for devs to build their own ML model



→ flexibly choose the forecasting time from months to hrs.

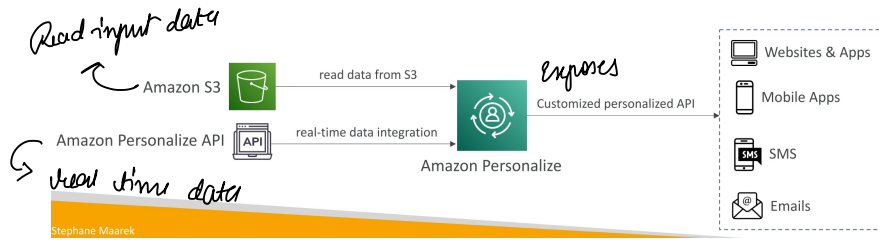


→ incremental learning & ability to fine tune manually.



## (10) Amazon Personalize

- build apps which provide real time personalized recommendations
- product recommendation, customized direct marketing.



## (11) Amazon Text

- extracts text, handwriting & data from any scanned documents!  
from IDS  
forms, tables, documents, pdfs.
- financial services, health care public sector