Machine Learning: Cheat Sheet

The shortest chapter in the book, this section seeks to familiarize the reader with some services within the still expanding list of Artificial Intelligence and Machine Learning related services that are being put out by AWS.

Now, Amazon also has a rather expansive set of services designed for various Artificial Intelligence and Machine Learning tasks. A rather recent addition to the AWS Services arsenal, these services are, frankly speaking, **not** my area of expertise. Nonetheless, an attempt has been made at explaining the ML services particularly those that I believe to be of the highest import. As I see it, most machine learning services boil down to the same task: **Prediction**. The major difference between most services being in the output and the input i.e. what the service is going to predict, and what information is that prediction based off of.

While a more detailed look at some of the ML services will be done in the future sections of this chapter, this section should be seen simply as a collection of extremely brief overviews on some of the more popular Machine Learning services, a sort-of "Cheat sheet" for AWS Machine Learning Services, if the reader will:-

Amazon Rekognition

An image recognition tool developed and made readily available by Amazon themselves. Can find objects, people, text, scenes in images and videos using Machine Learning. Use cases: Labelling, Content moderation, text detection, face detection and analysis, face search and verification, celebrity recognition and pathing.

Amazon transcribe

Used to transcibe/turn speech into text using machine learning. Has a feature called redaction which can automatically remove PII (Personally Identifiable Information from the audio recordings).

Amazon Polly

Used to turn text into human-like speech using machine learning, a TTS (Text-To-Speech) service developed and made readily available by Amazon.

Amazon Translate

Used to translate text from one language to another, allows you to localize content - such as websites and applications - for international users, and easily translate large volumes of text efficiently.

Amazon Lex

The same technology that powers Alexa, and is used to create conversational AI chatbots. Uses ASR (Automatic Speech Recognition) to convert speech to text.

Amazon Connect

Used to create virtual call centers, i.e. services that can recieve calls, create contact flows, etc. Can integreate with other CRM Systems or AWS.
Amazon ComprehendA serverless service for Natural Language Processing (NLP) tasks such as sentiment analysis, text classification/grouping, etc.

Amazon Comprehend Medical

Amazon Comprehend Medical detects and returns useful information in unstructured clinical text. Uses NLP to detect Protected Health Information (PHI). From an architecture POV, you could store your medical documents in S3, stream

real-time medical data through Kinesis Data Firehose or use Amazon Transcribe to transcibe patient narratives into text and then use Amazon Comprehend Medical for analyzing it.

Amazon SageMaker

Fully managed service for developers/data scienctists to build ML models. May be understood as an alternative to Jupyter Notebooks that utilize Amazon's infrastructure for the training and operation of their models instead of the system it is being run on.

Amazon Forecast

Fully managed service to deliver highly accurate forecasts using time-series forecasting.

Amazon Kendra

Fully managed document search service powered using Machine Learning, can be used to say...Extract answers from within a document (text, pdf, HTML, ppt, etc). It gives users the ability to integrate documents with natural language search capabilities. Additionally, it learns from user interactions/feedbacks to promote preferred results and also has the ability to manually fine-tune search results.

Amazon Personalize

Fully-Managed ML-Service to build apps with real-time personalized reccomendations using the same reccomendation algorithms that is used for the suggestion of products to customers on Amazon.com

Amazon Textract

Automatically extracts text, handwriting and data from any scanned documents using AI and ML.