



5 Industry Case Studies

TAKEAWAYS

Text Classification: Support Ticket Prioritization

- 1** Support ticket classification is a use case of text classification.
- 2** Data cleaning and EDA are critical steps in any AI project to ensure the model receives good quality of data.
- 3** Feature engineering is an important step where you convert the cleaned data to a particular format which is suitable to train the model.
- 4** Accuracy, Precision, Recall and F1 Score are the typical evaluation metrics used in evaluating the model.
- 5** A trained model is typically deployed in the cloud using frameworks like Flask, FASTAPI etc.
- 6** Other use cases of text classification are product review classification, sentiment analysis and spam detection.

Image Classification: Plant Health Monitoring System

- 1** Kaggle is a free platform from where you can collect datasets for free.
- 2** Convolutional neural network architecture is commonly used for image classification problems.
- 3** Few other use cases of image classification are health diagnosis, product classification and manufacturing quality control.

RAG-Based Gen AI: ChatGPT for Private Organizational Data

- 1** RAG application-based projects have slightly different project steps as compared to traditional AI projects.
- 2** Building a private ChatGPT for an organisation typically includes a system with two components – data ingestion and retrieval augmented generation (RAG).
- 3** Data ingestion system scraps the data from internet, converts it into embedding and stores the data as vectors in vector DB.
- 4** The RAG component converts the user query to embeddings, finds the match from Vector DB and sends it to the LLM to get a right answer.
- 5** RAG enables a LLM to answer questions on topics in which the model is not trained already. This includes questions on real time data as well.

Chatbot: Food Delivery Chatbot

- 1** Flow-Based Chatbots use fixed rules and do not need AI or NLP.
- 2** There are other Flow-Based Chatbots which use AI/NLP to understand the intent of the user query even when typed in free form.
- 3** The other category of chatbots is Open Ended Chatbot which takes any open question and answers accordingly like ChatGPT.
- 4** DialogFlow, Rasa, Botpress are some of the available chatbot frameworks.
- 5** One can also build custom chatbots using LLM and LangChain framework.
- 6** Botpress and DialogFlow are no code / low code frameworks which allows anyone without coding knowledge to build a chatbot.

Recommendation System: Book Recommendations

- 1** Recommendation system is a popular application of AI which recommends relevant content to users based on their past activities.
- 2** Two major approaches to build a recommendation system are content based filtering and collaborative filtering.
- 3** A/B testing is method is used to compare between recommendation systems.