

COVID-19 Information Chatbot

AIDI-2000-01 - APPLIED MACH LEARNING

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Introduction

Covid-19 is a new virus in the coronavirus family which infects humans through their respiratory tract. Like other coronaviruses, the symptoms are dry cough, fever, chills, sore throat, etc. Coronaviruses have been notorious to start outbreaks and Covid-19 was officially declared a pandemic by WHO on March 11, 2020.

Business Problem

This pandemic gave birth to a plethora of fake information from various sources. This makes getting information about what it is, how it spreads and precautions very difficult. We aim to provide a chat bot with all the basic information available. This chat bot uses frequently asked questions from various trusted sources like United Nations, Health Canada and CDC to give relevant and true information about Covid-19. A user can ask general questions like What is Covid-19? How to prepare for Covid-19? etc. This can save time and effort for searching relevant information online from trusted sources.

Current problem

Due to widespread misinformation, it has now become difficult for people to get correct information about the virus, and this makes them more confused about what exactly is the accurate information.

Our solution

Our chat-bot can be used by users to find answers to general queries like what is covid-19, how it spreads, question about different surfaces and how the ambiance affects the virus. As the source of the information is CDC (Centers for Disease Control and Prevention), Health Canada and UN (United Nations), the user can trust the information provided.

Technologies that can be used

DialogFlow: Dialog-Flow NLU is an API that makes it easier to develop chatbots. This API can be used in websites and mobile apps. It is managed by google so developer can use all the services provided by google along with DialogFlow.

Wit ai: Wit ai is an API which is now managed by Facebook and is used to develop chatbot applications that can be used in wearable devices, mobile apps, and smart homes. Wit AI is Natural Language Processing based and supports around

132 languages. Over 200,000 developers use Wit AI for creating an interactive chat bot which is able to make interactions with the user.

Rasa: Rasa is an opensource API which provides a way to develop an end-to-end chatbot application. It provides methods to answer questions submitted by the user. It is trained using supervised learning and it provides a GUI with enterprise application support. Rasa also has some of their own tutorials which support the development and a friendly community as well.

Amazon Lex: Amazon Lex is based on Natural Language Understanding which provides services to develop a chat bot that can converse with the user. It also has Amazon's voice and text features where the user is able to perform speech to text operations and also use voice Q&A like Alexa.

Chatterbot: Chatterbot works on python library for developing a chatbot. Here the training of chatbot is done from the input entered by the user so here output depends on the conversation. Once the input is received it will be processed by the adaptor for the output and then appropriate output will be generated.

DialogFlow	Wit AI	RASA	Amazon Lex	Chatter Bot
Installation Not Required	Installation required	Installation required	Installation Not Required	Installation required
Data is on Google cloud	Data is in local system	Data us in local system	Data is on AWS cloud	Data is on local system
Easy for all	Requires proper knowledge	Requires proper knowledge	Requires proper knowledge	Requires proper knowledge
Narrow system with less support	Many example projects available on GitHub	Many example projects available on GitHub	Many example projects available on GitHub	Many example projects available on GitHub
Does not support custom model training	Supports custom model and training.	Supports custom model and training.	Supports custom model and training.	Supports custom model and training.

Integration with Google Assistant	No integration is possible	Integration option not available	Integration with Amazon Alexa	Integration option not available
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Why build a custom solution?

There is another way of building chatbots. We can use a deep learning NLP Keras model and our own data set. This will provide wide range of options and everything will be made from scratch. The model will be trained by self so nothing is predefined. There are no restrictions and a custom solution allows more freedom to create a niche product capable of tackling our specific problem. Since having a pandemic chatbot for questions is a specific niche task, we believe that implementing a chatbot from scratch is a better way. Other options are generic chatbot frameworks and to target a specific niche, it is important to build a chatbot from scratch.

Final Project Screenshot

