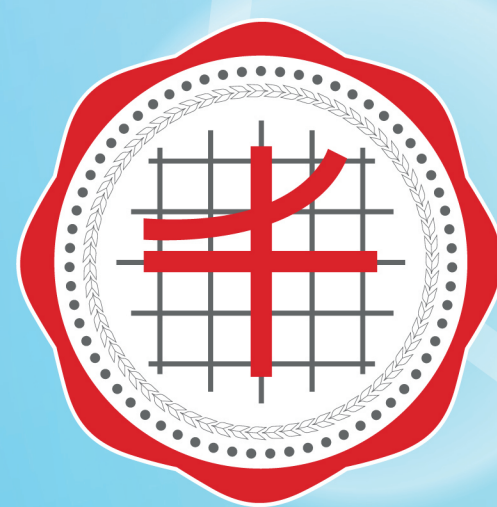




Chatbot for Graduate School

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Bachelor of Science Programs in Computer Science

Abstract

Chatbot is a program that facilitates answering questions and providing information to users, which can help reduce the workload for organizations that have to serve a large number of clients. Graduate School at Srinakharinwirot University (SWU) is one of the divisions that provide services to graduate students and faculty. There are rules and procedures for students and faculty to comply with the regulations.

The aim of this research is to help improve the services of Srinakharinwirot University Graduate School by bringing effective chatbots to answer customer questions and reduce the workload of staff in answering questions by studying three chatbot platforms: 1) Dialogflow 2) Chatfuel and

3) Manychat to compare features, usability and implementation with other applications such as line, facebook, twitter etc. The comparison results show that the Dialogflow platform is suitable to implement since it can be used with multiple applications at no cost and uses artificial intelligence (AI) to answer questions. Unlike Chatfuel and Manychat, they are just an automated Q&A and stand out in the way of broadcasting. Hence, we have developed a chatbot system using Dialogflow, which acquires frequently asked questions from 4 sections: (1) Ordering, (2) Article, (3) Registration, and (4) iThesis to train the chatbot to learn from a set of questions and answers.

Trained chatbots were then tested with two user groups: a group of 8 staff and a group of 30 graduate students. We assessed chatbot's performance with a questionnaire consisting of four issues: accuracy of the chatbot that responded to specific questions, usability of the chatbot, ease of use, and content and language that is easy to understand. The average score was 4.36, 4.33, 4.40, 4.06 respectively, which was good enough and able to improve the language and content to meet the needs of users more.

Related work

Dialogflow[5]

Dialogflow is a natural language understanding platform that makes it easy to design and integrate a conversational user interface into your mobile app, web application, device, bot, interactive voice response system, and so on. Using Dialogflow, you can provide new and engaging ways for users to interact with your product.

Dialogflow can analyze multiple types of input from your customers, including text or audio inputs (like from a phone or voice recording). It can also respond to your customers in a couple of ways, either through text or with synthetic speech.

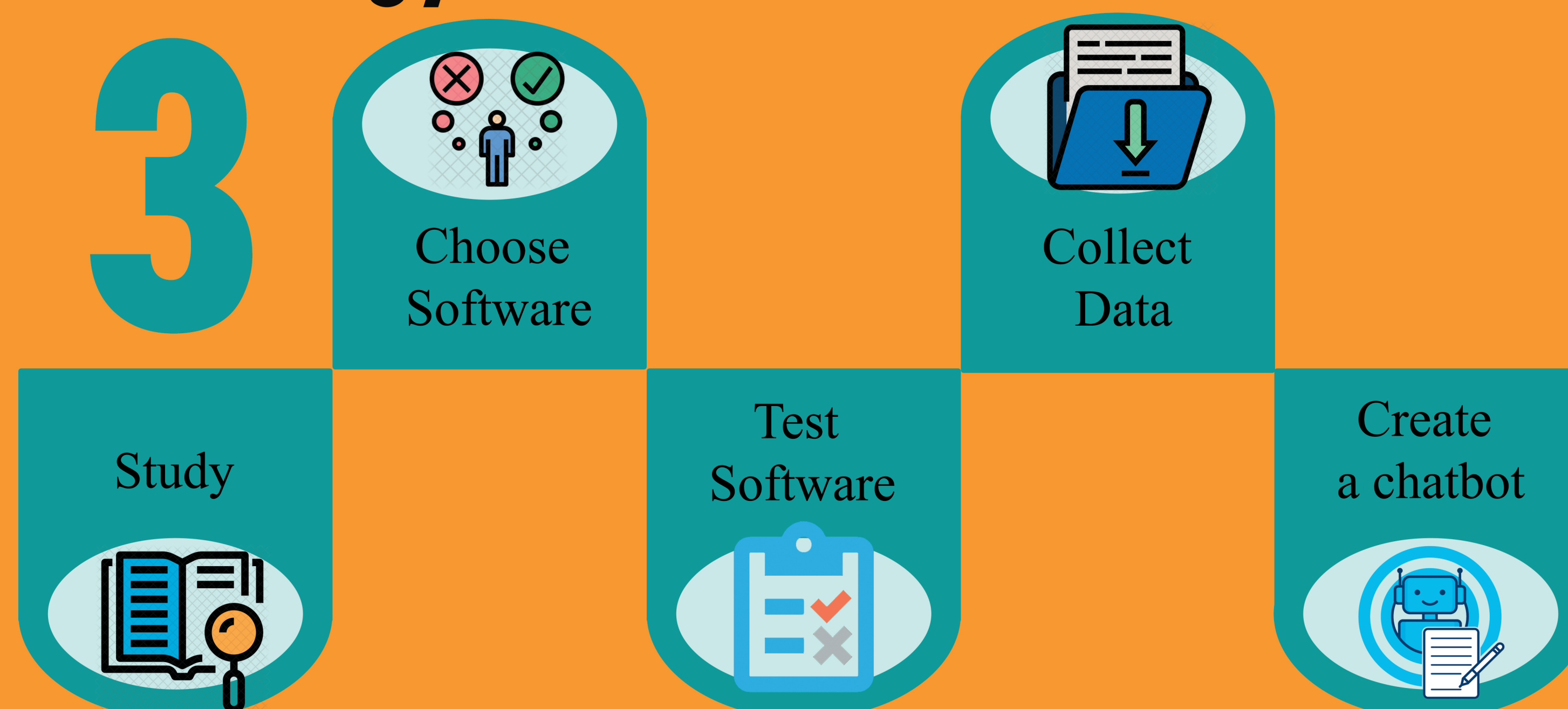
Manychat[6]

It's a chatbot builder platform for Facebook Messenger. Its core functions cover broadcast, analytics, post time setting and much more. For starters, the Tools are free to use, but are limited to certain functions. If you want to use unlimited, you need to pay monthly.

Chatfuel[6]

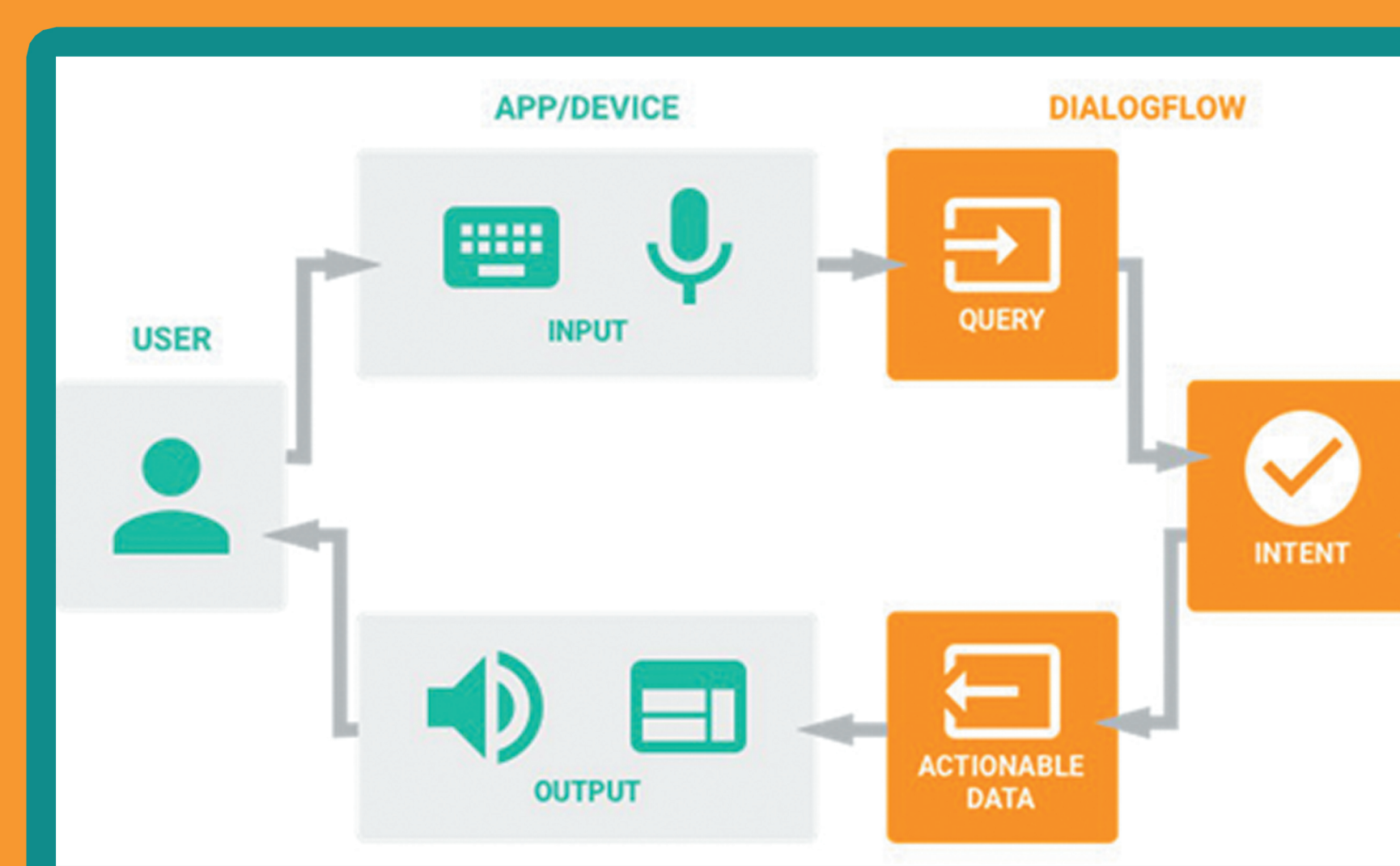
Creating a bot that blocks content in response to user conversations. Chatfuel is still only compatible with Facebook Messenger, if you choose to use it, be aware of the communication channel of those who want to use it. This chatbot is free to use, no function limits. But it's limited to 500 subscribers, and when a message is sent out, it will add the brand logo.

Methodology



Intents

An intent categorizes an end-user's intention for one conversation turn. For each agent, you define many intents, where your combined intents can handle a complete conversation. When an end-user writes or says something, referred to as an end-user expression, Dialogflow matches the end-user expression to the best intent in your agent.



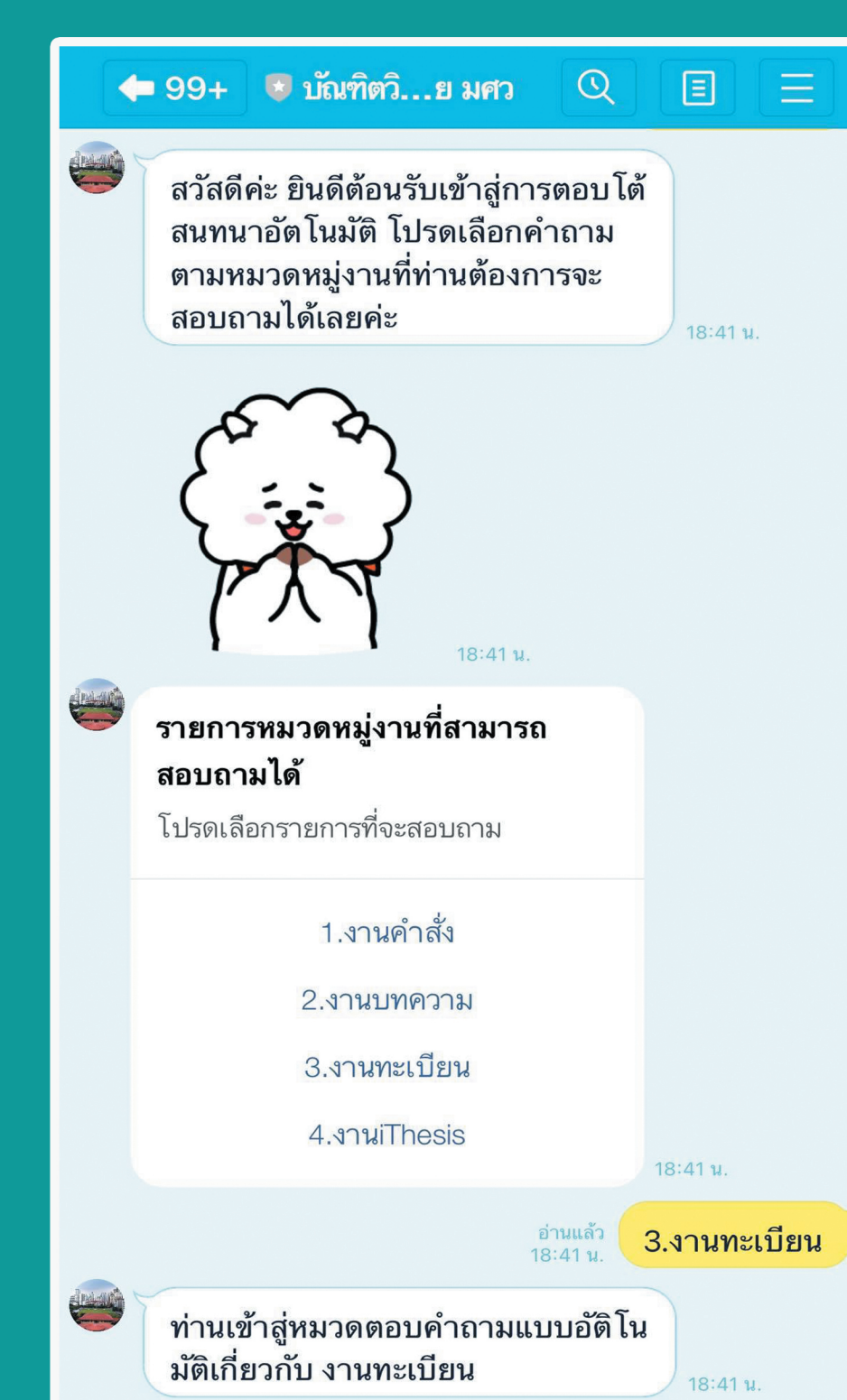
Conclusion

We chose Dialogflow for chatbot development because it has more features than ChatFuel and ManyChat, which is great for broadcasting. The results of evaluating the chatbot system for Q&A showed that the users were satisfied with the system. Accuracy of the chatbot that responded to specific questions, usability of the chatbot, ease of use, and content and language that is easy to understand. The average score was 4.36, 4.33, 4.40, 4.06 respectively.

Results

We have built a chatbot system using Dialogflow and brought a FAQ in order to train the system that covers four tasks: 1) ordering 2) articles 3) registration and 4) iThesis. Based on an assessment of the chatbot system from graduate students, the average score was 4.40 for ease of use.

	Dialogflow	ChatFuel	ManyChat
Block Content	yes	yes	yes
Context	yes	no	no
Intent	yes	yes	yes
Action and parameters	yes	no	no



- [1] X. Zhou et al., "Multi-Turn Response Selection for Chatbots with Deep Attention Matching Network," Association for Computational Linguistics.
- [2] "(No Title)." <https://papers.nips.cc/paper/5346-sequence-to-sequence-learning-with-neural-networks.pdf> (accessed Oct. 20, 2020).
- [3] I. Sutskever Google, O. Vinyals Google, and Q. V Le Google, "Sequence to Sequence Learning with Neural Networks."
- [4] "TF IDf | TFIDF Python Example. An example of how to implement TFIDF... | by Cory Maklin | Towards Data Science." <https://towardsdatascience.com/natural-language-processing-feature-engineering-using-tf-idf-e8b9d00e7e76> (accessed Oct. 20, 2020).
- [5] "Chat Bot using Dialogflow & Introduction to NLU | by Teera Suri | MFEC | Medium." <https://medium.com/mfec/chat-bot-using-dialogflow-introduction-to-nlu-4808412b6b0e> (accessed Oct. 20, 2020).
- [6] "[Case Study] Manychat คือ ? รวมเทคนิคการใช้ Chatbot มาทำการตลาด." <https://nerdoptimize.com/manychat-strategy/> (accessed Mar. 25, 2021).