Development of a Voice Chatbot for Payment Using Amazon Lex Service with Eyowo as the Payment Platform

Publisher: IEEE

Isaac Samuel ; Fiyinfoba A. Ogunkeye ; Ayobami Olajube ; Ayokunle Awelewa All Authors

Abstract: Engaging in financial transactions has remained a hassle for the visually impaired due to the lack of technological products to facilitate their financial independence an... **View more**

Metadata

Abstract:
Engaging in financial transactions has remained a hassle for the visually impaired due to the lack of technological products to facilitate their financial independence and inclusion. Automated teller machines (ATMs) and online banking applications do not provide any means through which the blind can engage in transactions without the need of a third party in managing their finances. This study aims at building a voice chatbot device that can be used for payment using Amazon Lex Service with Eyowo as the payment platform. The chatbot is built by leveraging on Artificial Intelligence (AI) technologies in the form of a service called Amazon Lex for configuring the bot with utterances and responses and Lambda Functions to validate the responses while carrying out the transactions by calling the Eyowo Application Programming Interface (API). A Raspberry pi single board computer is utilised as the medium of communication between the user and the chatbot. The Raspberry pi runs a script that collects voice input through a Universal Serial Bus (USB) microphone connected to it, which is sent to the Amazon Lex to be processed using Automatic Speech Recognition (ASR) and Natural Language Understanding (NLU). Then the chatbot sends back a suitable response to the user through the speaker connected to the Raspberry pi. The device [illegible] transfers

Published in: 2020 International Conference on Decision Aid Sciences and Application (DASA)

Date of Conference: 8-9 Nov. 2020

Date Added to IEEE *Xplore*: 15 January 2021

ISBN Information:

INSPEC Accession Number: 20364463

DOI: 10.1109/DASA51403.2020.9317214

Publisher: IEEE

Conference Location: Sakheer, Bahrain

Contents

I. Introduction

Artificial Intelligence (AI) has brought about some of today's most important technological advances. The emergence in AI and interaction of people with each other and the software used to connect to people has changed the way people communicate by providing an opportunity for people to talk directly to software, thus bringing forth the emergence of chatbots. Chatbots are computer programs that perform human-to-machine conversation in the accomplishment and fulfilment of a task using either auditory or textual interfaces depending on the preferred input modality [1]. Text-based chatbots can perform various tasks ranging from booking a hotel reservation to paying a bill, thus making life easier for consumers [2]. The use of text as the input modality is a limitation since a keyboard is required at every point whenever a user (the blind) wants to communicate to the bot [3]. Voice chatbots are considered more natural and efficient as it does not just make use of the most primary form of communication of humans (speech/voice). Still, it will be providing a more integrated customer experience with immediate verbal feedback, which will allow users to multitask with ease. The use of voice chatbots adds a certain level of trust from the user to the service being used [4], thus increasing the usability and continuous operation of the service to customers [5].