



## Review

### Enabling inclusion and citizenship with Cloud Computing Technologies, Cognitive Chatbots and Artificial Intelligence

Lucio Adolfo Meurer \*

The state of São Paulo is the most populous in Brazil, with 46 million inhabitants and generating one third of the total wealth produced in the country. Among the services provided to the population by the State Government, the issuance and renewal of identity documents and a driver's license are the most requested.

Given the number of citizens who demand these services every day, scheduling interviews to issue and renew those documents is a considerable logistical challenge.

The government has a network of citizen service centers where these documents are issued and, in recent years, the need to automate and ensure compliance with the prerequisites in the first interview has become one of the main goals of the government.

To solve this situation, an automated chatbot service system was developed, provided by cloud technologies, based on cognitive services, allowing citizens not only to schedule interviews to issue documents, but also to ensure compliance with all fees and prerequisites required.

The system in question aims at more than 90% assertiveness, preventing a second interview from being necessary due to the lack of information or the absence of required documents.

Considering that the state's low-income population needs to take about four trips by bus or train to participate in the interview, the assertiveness and ensuring that their document is issued in the first interview are no longer just an indicator of the government's effectiveness, but an inclusion factor for all sections of the population.

**Citation** Meurer L (2020) Enabling inclusion and citizenship with Cloud Computing Technologies, Cognitive Chatbots and Artificial Intelligence J Comput Eng Inf Technol 9:6 .DOI: 10.37532/jceit.2020.9(6).245

The state of São Paulo is the most populous and richest Brazilian state. Housing 46 million inhabitants in 250 thousand square meters. Its capital alone, the city of São Paulo, has more than 12 million inhabitants.

A population of this magnitude has considerable demands from the state government in terms of citizenship services, such as issuing and renewing identification documents, driving permits, among dozens of others.

The process of issuing documents is quite complex, requiring the payment of one or more fees, presentation of other documents and face-to-face interviews to collect photographs and fingerprints.

Since 1997, the São Paulo State Government has centralized these services in a network of seventy service agencies spread across the state, thirty in the capital and the rest in the interior of the state.

The scheduling of the interviews is quite complex, subject to errors and any absence of prerequisites can result in an unsuccessful interview, meaning a subsequent return. These rework interviews are especially damaging to the low-income population, as they mean, on average, four trips on buses or trains to return to the service center.

In order to reduce the rate of rework in these interviews, avoiding unnecessary returns, the State Government started the process of automating the scheduling of interviews, using cognitive services in the cloud, through a chatbots solution.

\*Corresponding author: Lucio Meurer, Department of Computer Science, University La Salle Canoas Brazil Tel: 5551993170159; E-mail: lucio.meurer@gmail.com

Received: December 9, 2020 Accepted: December 23, 2020 Published: December 30, 2020

#### Author Affiliation

Top

Department of Computer Science, University La Salle Canoas Brazil