



**A Thesis Submitted in Partial Fulfillment of the  
requirements for the degree of bachelor of Computer  
Science**

## **Asterisk-Rasa Connector**

**Natural language processing using IP telephony**

by  
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### **Abstract**

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# 1 Introduction

Chatbots are becoming one of the main tools for companies, mainly for customer service and information inquiries. Among the tools to create one, there is Rasa [1], open source [2], cross-platform as it is written in Python and with constant updates from the developers. These characteristics make it one of the favorites. One of the topics that has generated the most interest in the community lately is communication through voice with the chatbot. Connectors for web page interfaces already exist. The other area of great interest is telephony, so a way to use chatbots is needed in this area. For integration with telephony, Asterisk [3], also open source [4], is available, one of the most widespread tools in the world and integrated in communication projects such as FreePBX and Elastix.

## **2 Problem statement**

### **3 Justification**

As mentioned previously, there is great interest in using voice chatbots. In particular, its use in telephony to replace interactive voice response systems (menus based on recordings and navigated by pressing keys) by an intelligent chatbot.

## 4 Objectives

### General

- Create a connector, and a tutorial that explains its use, that allows communication between rasa and asterisk, through the use of stt and "text to speech (tts)" algorithms, text to speech.

### Specific

- Create a demo chatbot for the user to follow a script and measure precision using the Levenshtein distance to compare strings.
- Post the code on [github.com](https://github.com) or similar.

## **5 Literature review**

### **5.1 Web connector**

This connector establishes an interface in an internet browser through which you can have voice conversations with the chatbot. This tutorial uses the free mozilla tools for speech generation and conversion.

### **5.2 Alexa integration**

This project integrates a chatbot with Alexa, to make use of Amazon's voice conversion tools.



## 6 Hypothesis

It is possible to create a connector that is easy to implement and understand by the community by using interfaces based on the Python programming language. For this purpose the "Asterisk Gateway Interface (AGI)" will be used, which allows us to easily integrate Python.

## **7 Design and implementation**

## Bibliography

- [1] J. Jacoby. *Rasa Docs*. 2020. URL: <https://rasa.com/docs/> (visited on Dec. 13, 2020).

# A Appendix

## **Eins (ohne extra Eintrag im Inhaltsverzeichnis)**

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