

Configuration Manual

MSc Research Project
Cybersecurity

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MSc Project Submission Sheet
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Module: M.Sc. Research Project
Lecturer: Michael Prior
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Project Title: Improving Security of Voice Commerce in Smart Speakers

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Date: 15th August 2022

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1 Speech Recognition

There is a folder named Speech Recognition which contains Jupyter notebook file for this experiment. This was carried out in PyCharm 2021.2.2

Step 1 is to load the following libraries:

Jupyter Notebook

Torch

Librosa

Numpy

Soundfile

Scipy

IPython

Transformers

Step 2 We import tokenizer and model from facebook

Step 3 We save an audio file next to the Jupyter notebook file.

Step 4 The audio is converted and executed using code.

Step 5 Output is received

2 Voice Recognition

There is another folder named Voice recognition which has a python file for the experiment, there are 2 folders for testing and training and 2 files for testing and training as well.

Step 1 After loading the libraries, we record the audio using Pyaudio

Step 2 Extraction of the features is done using the code

Step 3 We train the model using GMM

Step 4 Test can be conducted for sample voice

3 Testing Alexa's Voice ID

Requirement: Alexa Device, Amazon account

Step 1. Register your Alexa device to your account

Step 2. Add default shipping address

Step 3. Add default payment method

- Step 4. Use Alexa app on mobile device to create Voice ID
- Step 5. Create Voice ID for more people
- Step 6. Give permission for Voice commerce only to one person
- Step 7. Ask Alexa “Who am I?” or “Do you know me” to test if Alexa recognizes your voice
- Step 8. Random users can give purchase commands to check the accuracy of the device

References

1. Amazon.com. (2021). Amazon.com Help: What Are Alexa Voice Profiles? [online] Available at: <https://www.amazon.com/gp/help/customer/display.html?nodeId=GYCXY2AB2QWZT2X>.