

# Speech Recognition Installation

Speech Recognition, as the name suggests, refers to automatic recognition of human speech. Speech Recognition is one of the essential tasks in the domain of human-computer interaction. If you have ever interacted with Alexa or have ever ordered Siri to complete a job, you have already experienced Speech Recognition.

Speech Recognition has various applications ranging from automatic transcription of speech data (like voice mails) to interacting with robots via speech.

gTTS (Google Text-to-Speech) is a Python library with Google Translate text-to-speech API that writes spoken mp3 data to a file, a file-like object for further audio manipulation, or stdout. It features flexible pre-processing and tokenizing, as well as automatic retrieval of supported languages.

Play sound on Python is smooth and can play a sound file. These solutions are cross-platform (Windows, Mac, Linux). The main difference is in the ease of use and supported file formats. All of them should work with Python 3. The audio file should be in the same directory as your python program unless you specify a path.

## Pre-Requisites

- A system running on Windows/Ubuntu APP/Ubuntu OS
- A user account with sudo/administration privileges
- Access to a terminal window/command-line

Before continuing with this tutorial, make sure you are logged in as root or a user with sudo/administration privileges.

In this tutorial, we will show you how to install Speech Recognition related packages on Windows and Ubuntu.

1. Install Speech Recognition, gTTS & playsound on Windows
2. Install Speech Recognition, gTTS & playsound on Ubuntu APP (Windows 10) or Ubuntu OS
3. Install Speech Recognition, gTTS & playsound on PyCharm

If you are working on the Windows system, please follow step 1, step 2, and step 3, but if you are working on Ubuntu OS, you follow only step 2 and step 3.

## 1. Install Speech Recognition, gTTS & playsound on Windows

Windows systems typically do not have Speech Recognition, gTTS & playsound build-in. Before installing Speech Recognition, gTTS & playsound, make sure you have installed Python

3+ version and upgraded Pip. Let us look at how to install Speech Recognition, gTTS & playsound on Windows:

- Open a Command Terminal from Windows system and verify Python & Pip as follow:

```
$ python --version  
  
$ python -m pip --version
```

```
C:\Program Files>  
C:\Program Files>python --version  
Python 3.7.7  
  
C:\Program Files>python -m pip --version  
pip 20.0.2 from C:\Users\somak\AppData\Roaming\Python\Python37\site-packages\pip (python 3.7)  
C:\Program Files>
```

- To verify Speech Recognition, gTTS & playsound, go to Python Console and type as below:

```
>> import speech_recognition  
  
>> from gtts import gTTS  
  
>> from playsound import playsound
```

```
C:\Program Files>python  
Python 3.7.7 (tags/v3.7.7:d7c567b08f, Mar 10 2020, 10:41:24) [MSC v.1900 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license" for more information.  
>>>  
>>>  
>>> import speech_recognition  
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
ModuleNotFoundError: No module named 'speech_recognition'  
>>>  
>>>  
>>> from gtts import gTTS  
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
ModuleNotFoundError: No module named 'gtts'  
>>>  
>>>  
>>> from playsound import playsound  
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
ModuleNotFoundError: No module named 'playsound'  
>>>  
>>>
```

- If you do not have Speech Recognition, gTTS, and playsound, then running the above command will give no module error as above. Now, to install Speech Recognition, gTTS & playsound from Command Terminal, follow the below steps.

The playsound module is a cross-platform module that can play audio files. The playsound does not have any dependencies, install with Pip in your virtual environment, and run.

```
$ python -m pip install gTTS
$ python -m pip install SpeechRecognition
$ python -m pip install playsound
```

```
C:\Program Files>python -m pip install gTTS
Collecting gTTS
  Using cached gTTS-2.1.1-py3-none-any.whl (25 kB)
Collecting gtts-token>=1.1.3
  Using cached gTTS-token-1.1.3.tar.gz (3.4 kB)
Collecting six
  Using cached six-1.15.0-py2.py3-none-any.whl (10 kB)
Collecting beautifulsoup4
  Using cached beautifulsoup4-4.9.1-py3-none-any.whl (115 kB)
```

```
C:\Program Files>python -m pip install SpeechRecognition
Collecting SpeechRecognition
  Using cached SpeechRecognition-3.8.1-py2.py3-none-any.whl (32.8 MB)
Installing collected packages: SpeechRecognition
Successfully installed SpeechRecognition-3.8.1
WARNING: You are using pip version 20.0.2; however, version 20.1.1 is available.
You should consider upgrading via the 'C:\Program Files\Python37\python.exe -m pip install --upgrade p

C:\Program Files>python -m pip install playsound
Collecting playsound
  Using cached playsound-1.2.2-py2.py3-none-any.whl (6.0 kB)
Installing collected packages: playsound
Successfully installed playsound-1.2.2
WARNING: You are using pip version 20.0.2; however, version 20.1.1 is available.
You should consider upgrading via the 'C:\Program Files\Python37\python.exe -m pip install --upgrade p
```

- Verify Speech Recognition, gTTS & playsound as below:

```
C:\Program Files>python
Python 3.7.7 (tags/v3.7.7:d7c567b08f, Mar 10 2020, 10:41:24) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
>>>
>>> import speech_recognition
>>> from gtts import gTTS
>>>
>>>
```

```
C:\Program Files>python
Python 3.7.7 (tags/v3.7.7:d7c567b08f, Mar 10 2020, 10:41:24) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
>>> from playsound import playsound
>>>
>>>
```

## 2. Install Speech Recognition, gTTS & playsound on Ubuntu APP (Windows 10) or Ubuntu OS

There are several ways you can install Speech Recognition, gTTS & playsound on the Ubuntu system, and you can use any of the below process on Ubuntu APP or Ubuntu OS because all are the same.

1. Install Speech Recognition, gTTS & playsound using Command Terminal
2. Install Speech Recognition, gTTS & playsound using Shell Scripts

### 1. Install Speech Recognition, gTTS & playsound using Command Terminal

To install Speech Recognition, gTTS & playsound package with Command Terminal, open Command Terminal from the Ubuntu OS, or Ubuntu APP from Windows.

- First, go to Python console and verify it as below:

```
>> import speech_recognition
>> from gtts import gTTS
>> from playsound import playsound
```

```
somak@LAPTOP-2QHNB620:~$
somak@LAPTOP-2QHNB620:~$ python3
Python 3.6.9 (default, Apr 18 2020, 01:56:04)
[GCC 8.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>>
>>>
>>> import speech_recognition
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'speech_recognition'
>>> from gtts import gTTS
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'gtts'
>>>
```

```
somak@LAPTOP-2QHNB620:~$
somak@LAPTOP-2QHNB620:~$ python3
Python 3.8.2 (default, Apr 27 2020, 15:53:34)
[GCC 9.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>> from playsound import playsound
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ModuleNotFoundError: No module named 'playsound'
```

- Later, come out from the Python Console and run the below command to install Speech Recognition, gTTS and playsound:

```
$ pip3 install gTTS

$ pip3 install SpeechRecognition

$ pip3 install playsound
```

```
somak@LAPTOP-2QHN620:~$
somak@LAPTOP-2QHN620:~$ pip3 install gTTS
Collecting gTTS
  Downloading https://files.pythonhosted.org/packages/a1/0c/4ca77eca3b739a4a08360930643f58d714e302fee0d2f8c654e67d9af8e7/
Collecting gtts-token>=1.1.3 (from gTTS)
  Downloading https://files.pythonhosted.org/packages/e7/25/ca6e9cd3275bfc3097fe6b06cc31db6d3dfaf32e032e0f73fead9c9a03ce/
Collecting requests (from gTTS)
  Downloading https://files.pythonhosted.org/packages/1a/70/1935c770cb3be6e3a8b78ced23d7e0f3b187f5cbfab4749523ed65d7c9b1/
100% | 61kB 558kB/s
Collecting beautifulsoup4 (from gTTS)
  Downloading https://files.pythonhosted.org/packages/66/25/ff030e2437265616a1e9b25ccc864e0371a0bc3adb7c5a404fd661c6f4f6/
100% | 122kB 64kB/s
Collecting six (from gTTS)
  Downloading https://files.pythonhosted.org/packages/ee/ff/48bde5c0f013094d729fe4b0316ba2a24774b3ff1c52d924a8a4cb04078a/
```

```
somak@LAPTOP-2QHN620:~$
somak@LAPTOP-2QHN620:~$
somak@LAPTOP-2QHN620:~$ pip3 install SpeechRecognition
Collecting SpeechRecognition
  Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by
  timeout=15",)': /packages/26/e1/7f5678cd94ec1234269d23756dbdaa4c8cfaed973412f88ae8adf7893a50/SpeechRecogni
  Downloading https://files.pythonhosted.org/packages/26/e1/7f5678cd94ec1234269d23756dbdaa4c8cfaed973412f88
100% | 32.8MB 40kB/s
Installing collected packages: SpeechRecognition
Successfully installed SpeechRecognition-3.8.1
somak@LAPTOP-2QHN620:~$
```

```
somak@LAPTOP-2QHN620:~$
somak@LAPTOP-2QHN620:~$ pip3 install playsound
Defaulting to user installation because normal site-packages is not writeable
Collecting playsound
  Downloading playsound-1.2.2-py2.py3-none-any.whl (6.0 kB)
Installing collected packages: playsound
Successfully installed playsound-1.2.2
somak@LAPTOP-2QHN620:~$
somak@LAPTOP-2QHN620:~$
```

- Verify Speech Recognition, gTTS & playsound as below:

```
somak@LAPTOP-2QHN620:~$
somak@LAPTOP-2QHN620:~$ python3
Python 3.6.9 (default, Apr 18 2020, 01:56:04)
[GCC 8.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>>
>>>
>>> import speech_recognition
>>> from gtts import gTTS
>>>
>>>
```

```
somak@LAPTOP-2QHNB620:~$ python3
Python 3.8.2 (default, Apr 27 2020, 15:53:34)
[GCC 9.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>> from playsound import playsound
>>>
>>>
```

## 2. Install Speech Recognition, gTTS & playsound using Shell Script

First, we need to download the Robotic-Greeter folder from the [Robotic-Greeter-GitHub](https://github.com/ripanmukherjee/Robotic-Greeter) link.

You can download it in two ways:

1. Clone it with Command Terminal
2. Download it as a Zip file

Inside of the Robotic-Greeter folder, we have the shell (Unix) script, which you need to run, and this script will automatically install Speech Recognition, gTTS & playsound on your computer.

### 1. Using Clone method

Go to Ubuntu APP from Windows 10 or Command Terminal from Ubuntu OS and run the following command:

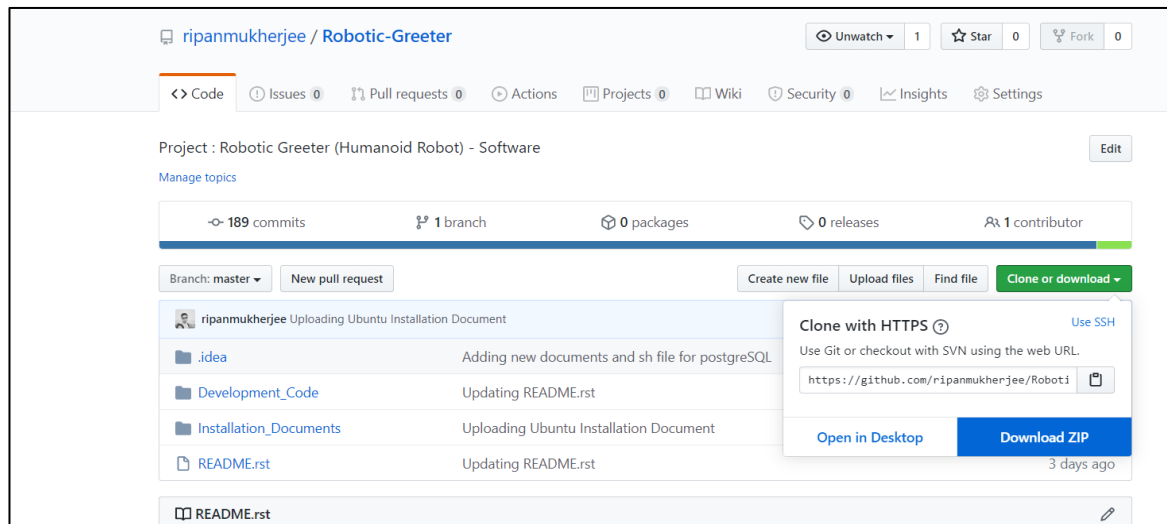
```
$ git clone https://github.com/ripanmukherjee/Robotic-Greeter.git
```

```
somak@LAPTOP-2QHNB620:~$
somak@LAPTOP-2QHNB620:~$ git clone https://github.com/ripanmukherjee/Robotic-Greeter.git
Cloning into 'Robotic-Greeter'...
remote: Enumerating objects: 625, done.
remote: Counting objects: 100% (625/625), done.
remote: Compressing objects: 100% (394/394), done.
remote: Total 1043 (delta 338), reused 494 (delta 221), pack-reused 418
Receiving objects: 100% (1043/1043), 3.04 MiB | 1.41 MiB/s, done.
Resolving deltas: 100% (528/528), done.
somak@LAPTOP-2QHNB620:~$
somak@LAPTOP-2QHNB620:~$
somak@LAPTOP-2QHNB620:~$ ls -lrt
total 0
drwxrwxrwx 1 somak somak 4096 Jun  5 04:13 Robotic-Greeter
somak@LAPTOP-2QHNB620:~$
```

This command will automatically download the Robotic-Greeter folder on your computer.

## 2. Download as Zip

Also, you can directly download the Zip file and Unzip it. Then it would be best if you put it in the proper directory or your project directory.



Once the download is complete, please go to the following directory from Ubuntu APP Terminal or Command Terminal on Ubuntu OS:

```
$ cd Robotic-  
Greeter/Installation_Documents/Speech_Recognition_Installation
```

In this folder, you will get ***Speech\_Recognition\_Installation.sh*** script. To list the directories and files in this folder, run “ls -lrt” and later change the executable permission for the file with “chmod.”

```
$ ls -lrt  
  
$ chmod +x *.sh
```

```
somak@LAPTOP-2QHNB620:~$  
somak@LAPTOP-2QHNB620:~$ cd Robo*  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter$  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter$ cd In*  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents$  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents$ cd Spee*  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$ ls -lrt  
total 4  
-rw-rw-rw- 1 somak somak 2107 Jun  6 20:23 README.rst  
-rwxrwxrwx 1 somak somak 298 Jun  6 20:23 Speech_Recognition_Installation.sh  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$ chmod +x *.sh  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$
```

After that, run the scripts as follow:

```
$ sh Speech_Recognition_Installation.sh
```

```
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$  
somak@LAPTOP-2QHNB620:~/Robotic-Greeter/Installation_Documents/Speech_Recognition_Installation$ sh Speech_Recognition_Installation.sh  
Starting Installing Speech Recognition!!  
Defaulting to user installation because normal site-packages is not writeable  
Collecting gTTS  
  Downloading gTTS-2.1.1-py3-none-any.whl (25 kB)  
Collecting BeautifulSoup4  
  Downloading BeautifulSoup4-4.9.1-py3-none-any.whl (115 kB) 115 kB 555 kB/s  
Requirement already satisfied: six in /usr/lib/python3/dist-packages (from gTTS) (1.14.0)  
Requirement already satisfied: requests in /usr/lib/python3/dist-packages (from gTTS) (2.22.0)  
Collecting gtts-token==1.1.3  
  Downloading gtts-token-1.1.3.tar.gz (3.4 kB)  
Requirement already satisfied: click in /usr/lib/python3/dist-packages (from gTTS) (7.0)
```

Later, you can verify it again as below:

```
somak@LAPTOP-2QHNB620:~$  
somak@LAPTOP-2QHNB620:~$ python3  
Python 3.6.9 (default, Apr 18 2020, 01:56:04)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>>  
>>>  
>>>  
>>> import speech_recognition  
>>> from gtts import gTTS  
>>>  
>>>
```

```
somak@LAPTOP-2QHNB620:~$  
somak@LAPTOP-2QHNB620:~$ python3  
Python 3.8.2 (default, Apr 27 2020, 15:53:34)  
[GCC 9.3.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>>  
>>> from playsound import playsound  
>>>  
>>>
```

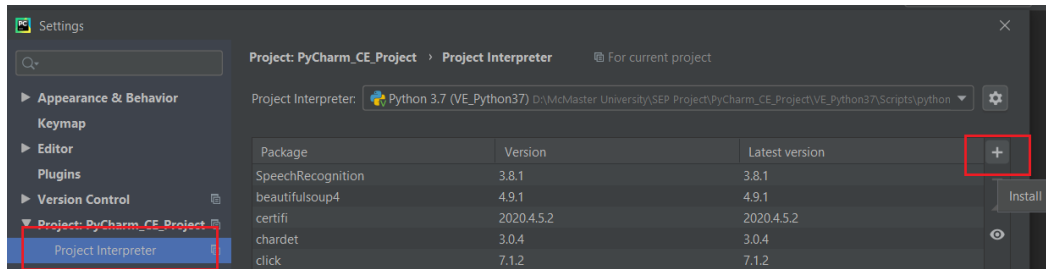
Installation done!!

### 3. Install Speech Recognition on PyCharm

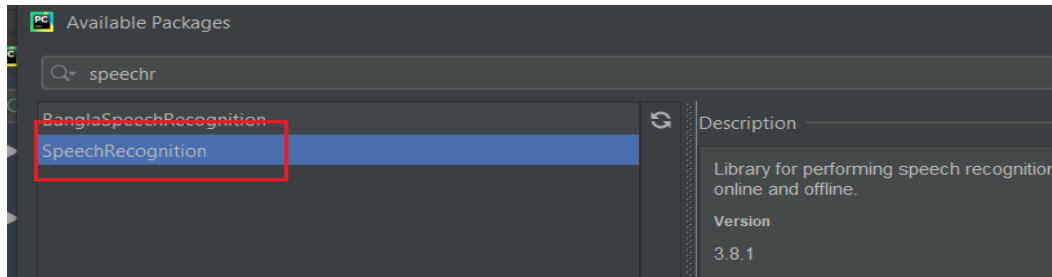
If you wish to run or execute the code from PyCharm CE, and PyCharm CE gives error regarding Speech Recognition, gTTS & playsound module, you can also install it from PyCharm Packages as below:

- Go to Settings and click on Project Interpreter.
- In the Project Interpreter, click on “+” to add packages.

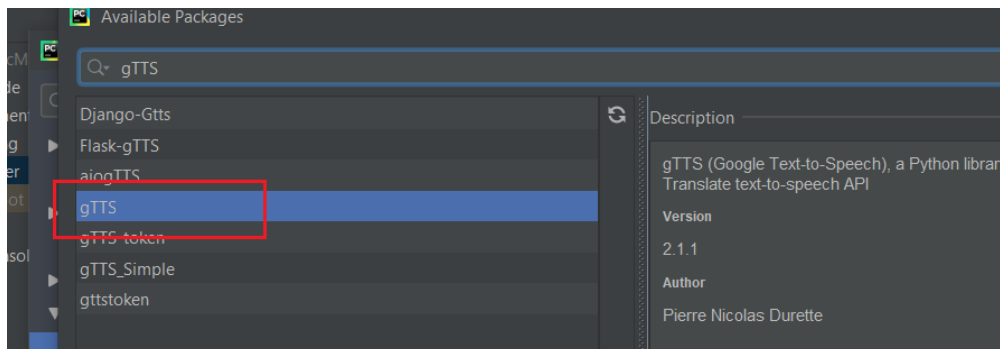




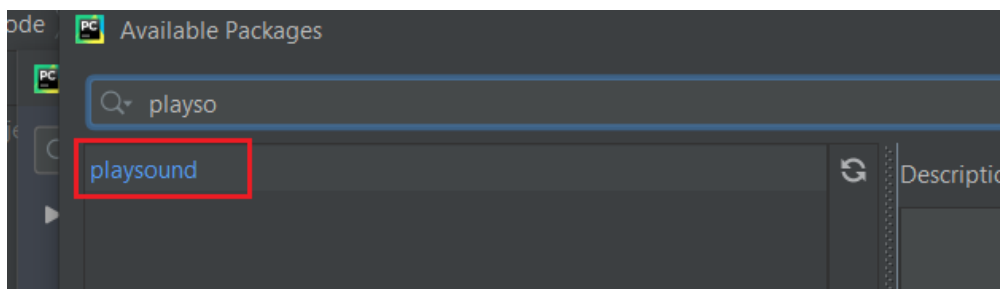
- In the Available Packages tab, search for “SpeechRecognition” and install it.



- In the Available Packages tab, search for “gTTS” and install it.



- In the Available Packages tab, search for “playsound” and install it.



For more details related to Speech Recognition, please visit the [Speech Recognition](#), [gTTS](#), and [playsound](#) Website.