

LingoPros



User Manual

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Introduction

https://www.cefns.nau.edu/~edo/Classes/CS_Capstone/Assignments/Product%20Delivery.pdf

Above is the link to the user manual description

We are happy that you are using the Online Speech Analysis Tool and the AuToBI Toolchain to aid you in your research. The Online Speech Analysis provides a fast and easy-to-use interface where users can analyze speech files in a timely manner. The AuToBI toolchain provides an analysis on speech files as well, but it uses AuToBI for attribute scoring. The purpose of this manual is to help you install, use, and maintain our products. We hope that everything is intuitive and easy to understand.

Installation

Website

No installation is necessary for the website. Simply follow this link:

<http://www.lingoinspect.com:3000/>. Once you are on the page, you can login and perform a speech analysis on a .wav file.

AuToBI

Ideally, this will already be installed on your system, but you may eventually want to install it on another system. This will outline how to do just that:

Requirements: Java 1.8 or higher, Apache Ant.

Install the AuToBI Runner:

Step 1: Install Apache Ant by using the following guide: <http://ant.apache.org/manual/install.html>

Step 2: Make sure that you have java installed and can be run on command line.

Step 3: Download our programs files from our github at:

<https://github.com/jls865/CapstoneAuToBI/tree/master/CapstoneA>

Step 4: Make sure you cd into the correct directory where you placed our program files.

Install the WekaRunner & Neural Network Same Requirements as Above:

Step 1: Download our program files from the github at:

<https://github.com/MattQuintana/Capstone-Labeler-Demo>

Step 2: Make sure you cd into the correct directory where you placed our program files.

Configuration and Daily Operation

Website

Initially, there will be no user accounts registered to the site aside from your admin account. To allow users to create an account, they will need a special access code that only you can create. When you login with your admin account, you will have access to a page where you can create custom codes. Once you create a code, you just need to email the code to the user who wishes to make an account. They then just have to fill out the necessary fields and should be able to login after their account is created.

Once users are registered and logged in, they will be able to navigate to different pages around the site. They will be able to navigate to the “Perform Analysis” page where they can upload an audio file into the server make sure the name of the file you have includes on spaces see troubleshooting for more information on this. Once the file is uploaded, they can click to perform an analysis and the server will start to work. Once the analysis is finished, the user will see the results of the analysis. These normal users will not have access to your access code generator.

AuToBI

Once you have everything setup and are in the correct directory run the following commands:

Step 1: The first command is just: `ant` after typing `ant` hit the enter key

Step 2: You will be prompted to enter in four valid inputs they are as follows(Be sure to hit the enter key for every command).

Step 3: The first input is the input audio file which you want to analyze must be of type `.wav`.

Step 4: The second input is the output `.arff` file where you want the results to be stored.

Step 5: The third input is the model that you want to use but as of now there is only one available model so just put a `0`.

Step 6: The fourth input is the type of analysis you would like to run the following inputs are valid and their value is explained to the right:

- `0` = This command is the boundary tone classifier
- `1` = This command is the intermediate phrase boundary detector
- `2` = This command is the intonational phrase boundary detector
- `3` = This command is the phrase accent classifier
- `4` = This command is the pitch accent detector
- `5` = This command is the pitch accent classifier

An example of exactly what you would type is below:

```
ant
test.wav
out.arff
0
3
```

This command will run AuToBI analysis on the test.wav file and it will place the results into the output file out.arff. The analysis will be ran using the BURNC model (0) and the type of analysis would be phrase accent classifier (3).

Fixing AuToBI data mismatch issues

In order to fix the data mismatch issues that AuToBI generates, an external python script must be used. The script to do replacements is located in the utils folder of the project and it is called replacer.py.

It requires four arguments when called, the text to replace, what to replace it with, the input file to scan, and the output file to write to.

From the command line, the command would be:

```
python replacer.py "text to replace" "text to replace with" input_file output_file
```

Weka and Neural Network

In order to run Weka and the Neural Network you will need to do the following steps:

Step 1: Make sure that you have an arff output file from AuToBI to input into the program.

Step 2: Navigate to the bin directory of the project folder.

Step 3: To call the general tester of the arff file, call the following command: from the command line.

```
java capstone_demo.neuralNetAnalysis [location of arff file to pass]
```

Maintenance

The source code can be found at: .

There a few command line or terminal operations that may need to be conducted. For example, an operation possibly needed to be done by Dr. Okim Kang is removing excess sound files that failed to be analyzed and removed from our server. Although the event that files failed to analyze is rare, the effect of this is benign to the project's health as a whole. This possible event may still need someone to go to the server and in the command line remove sound files still around in the "soundFiles" folder. A good practice would be to monthly check if any sound files are still in that folder (as they should have been removed upon analysis completion) and remove them so that accidentally stored sound files do not feel the server's limited space. That practice is actualized in number one.

Here are three major commands possibly needing to be done.

1. To do this cleanup, simply open "Terminal" on Dr. Okim's computer and run the following commands in this order:

```
ssh lingolnspect  
cd capstonePraatInterface  
sudo service mongod start
```

```
ssh lingolnspect
cd capstonePraadInterface/soundFiles
rm *.wav
rm *.wav.TextGrid
exit
```

Those commands will remove anything that somehow managed to stay into the soundFiles folder.

2. To make sure the database still interacts with the project, every month or so make sure to run these commands in Dr. Okim's computer's terminal:

```
ssh lingolnspect
cd capstonePraadInterface
sudo service mongod start
exit
```

As that would ensure that the MongoDB is running, which is crucial to the functionality of the project. While we never ran into it stopping on its own yet, it's good to know how to start it should it stop.

3. To make sure that project is still up in running, go that same specific terminal and type in this order:

```
ssh lingolnspect
pm2 status
```

The following result should reveal whether or not the status is "online", which means the project is still working:

```
root@capstoneServer:~/capstonePraadInterface# pm2 status
```

App name	id	mode	pid	status	restart	uptime	cpu	mem	user	watching
www	0	fork	2556	online	29	5D	0%	151.6 MB	root	disabled

```
Use `pm2 show <id|name>` to get more details about an app
```

However, in the event you see a failure message like so:

```
root@capstoneServer:~/capstonePraadInterface# pm2 status
```

App name	id	mode	pid	status	restart	uptime	cpu	mem	user	watching
www	0	fork	0	stopped	29	0	0%	0 B	root	disabled

```
Use `pm2 show <id|name>` to get more details about an app
```

Try command number four next.

4. To start the project after possible failure, make you are SSH'd to the server:

```
ssh lingolnspect
```

After doing so, run the following command:

```
cd capstonePraatInterface  
pm2 start www
```

That should start the website again and to verify this, try command number three again to make sure that the start worked.

Recurring Fees are associated with the web application and for the sake of keeping the service hosted and easily accessible, two particular components must be repurchased on different time intervals and they are as follows:

1. Digital Ocean hosting fee: can vary from month to month but will not exceed \$5.00 USD due at the start of every month. Often, the amount owed will be less than \$5.00. This amounts to at most \$60.00 for the whole year, but again depending on usage of this service, the year total may be less.
2. Domain name registration: The website www.enom.com has the domain name "lingoinspect" on its registry and will stay exclusively connected to our project until May 2, 2019 at which point the maintainer of this project may choose to renew the name at the cost of \$13.95 or possibly more if Enom chooses to raise the price later on. Technically the domain name is not necessary to use our service as a user can go to the IP address of the server with the port number on his or her browser of choice and access this service as well, but the domain name lingoinspect.com is easier to remember and enter.

Troubleshooting

Website

There are a few situations which may arise as the website continues in its day to day operations:

- Should a user not be able to connect to the site, one of two problems may be happening:
 1. User is not on a secure wireless network:
 - a. Switch to a secure network.
 - b. An example is that the network "NAU" is secure, but "NAU-Guest" will not work.
 2. Try command number three in Maintenance to make sure the project is running. If not running, try command number four.

- Should a user not be able to login, first make sure that their information is correct. If the issue still persists, it likely means their information was somehow dropped from the database. If this is the case, they will have to make a new account.
- If a user navigates to the webpage and an error says that the page could not be found, it means that the server has likely crashed or shutdown for some other reason. To solve this, simply restart the server.
- If an analysis on the server is not running or taking too long, first make sure the size of the audio file is not excessively large. Other options are to try and find a better internet connection or try again later.
- If the issue still persists, then it could mean that the server is being bogged down by too many operations or other information. You could try to restart the server in command number four in Maintenance and try again after you can verify it is running with command number three also in Maintenance.
- If there is an error uploading the file make sure that there are no spaces in the file name such as "Short sample file.wav" would not work must be like "Short_sample_file.wav" and the file must be the correct type.

AuToBI

There are only a couple ways this process could go wrong but here are some troubleshooting tips:

- If an error occurs first be sure that you are in the correct working directory of the program location and also that you ran the correct command with valid inputs.
- If the error still persists, try copying and pasting it into google to see if there is an unforeseeable problem. Usually they will instruct you on how to fix it.
- If issues still persist and it seems to be with our program, try uninstalling it and reinstalling it to try and fix the issues.

Conclusion

We hope we covered enough in this manual to answer all of your questions. With this manual, you should be able to properly operate and manage our products with ease. We will be moving onto professional careers, but we would be happy to answer any questions you may have in the following months. Our emails are listed below. Best wishes from LingoPros!

AuToBI Questions:

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Website Questions:

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