MASTER OF TECHNOLOGY - INTELLIGENT SYSTEMS 2020

EBA5004 PRACTICAL LANGUAGE PROCESSING

Installation and User Guide

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Installation and User Guide

1. Create and activate Virtual Environment (recommended) with python version 3.6.13

2. Clone the following github repositories and extract to the desktop:

   https://github.com/nuschandra/Chatbot-Telegram/tree/chandra-branch

   https://github.com/nuschandra/Virtual-Recruiter/tree/chandra-resume-parser

3. The Chatbot-Telegram is the main repository of the project as it contains all the chatbot related functionalities which has been integrated with our PLP models.

4. The Virtual Recruiter repository comprises of the scripts to train the resume NER model, JD NER Model, Bert detection model, etc.

5. Open terminal and navigate to the directory where 'requirements.txt' file is located.

6. Install the 'requirements.txt' file using the following command:
   ```
   pip install -r requirements.txt
   ```

7. Install java and make sure environment variable is set.

8. Install sutime
   i) use the following command:
   ```
   pip install sutime==1.0.1
   ```
   ii) Install the corresponding Java dependencies with the following command:
   ```
   mvn dependency:copy-dependencies -DoutputDirectory=./jars
   -f $(python3 -c 'import importlib; import pathlib;
   print(pathlib.Path(importlib.util.find_spec("sutime").orig
   in).parent / "pom.xml")')
   ```
   Note: Check step 7, if you face any error while running the above command
   Note: If you don't have native python, follow the below steps:
   i) Run the following in your python env (conda env)
   ```
   import importlib;
   import pathlib;
   print(pathlib.Path(importlib.util.find_spec("sutime").
   origin).parent / "pom.xml")
   ```

ii) Copy the output (path for the pom.xml)
iii) Run the below maven command in the terminal

```
mvn dependency:copy-dependencies -
DoutputDirectory=./jars -f $<copied path>
```

Github Reference link : https://github.com/FraBle/python-sutime

9. In case the second command gives an error “mvn: command not found”, then ‘maven’ needs to be installed. Based on your OS, follow the link below to install ‘maven’ and then execute the second command : https://www.baeldung.com/install-maven-on-windows-linux-mac

   For Mac users, another alternative to install ‘maven’ is to install it using Homebrew. If you do not have Homebrew installed on your mac, you can use the below command to install it :

   ```
   /bin/bash -c "$(curl -fsSL
   https://raw.githubusercontent.com/Homebrew/install/master/i
   nstall.sh)"
   ```

   Once Homebrew is installed, you can run below command to install maven:

   ```
   $ brew install maven
   ```

   reference link : https://java2blog.com/install-maven-on-mac/

The steps from 10 to 13 are optional and you can directly download the required .hdf5 file from step 14 if you wish to.

10. Download the BERT uncased model from the link : https://storage.googleapis.com/bert_models/2018_10_18/uncased_L-12_H-768_A-12.zip

    i. Create a folder named ‘model’ under Virtual-Recruiter-chandra-resume-parser/chatbot/
    ii.Extract the contents of this downloaded zip file into the ‘model’ folder.

11. Now in terminal, go to Virtual-Recruiter-chandra-resume-parser/chatbot/ and run the following command:

    ```
    python convert_to_csv.py
    ```

12. Once the execution is successful, run the following command:

    ```
    python bert_finetuning.py
    ```

This would train the BERT model for 20 epochs and generate a bert_intent_detection.hdf5 file.

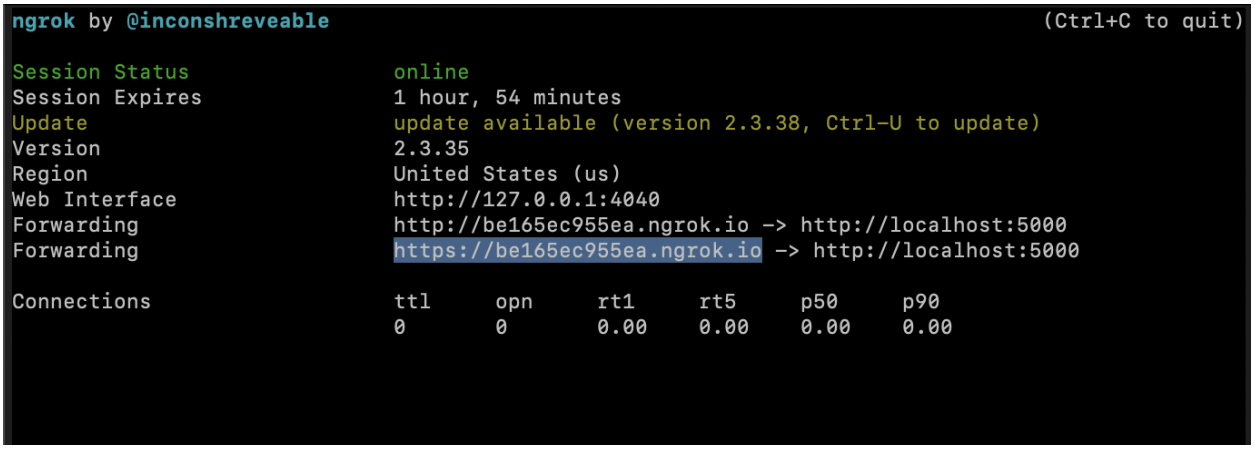
13. Copy this bert_intent_detection.hdf5 file and paste it inside the Chatbot-Telegram-chandra-branch/ (the second github repository that is extracted) folder.

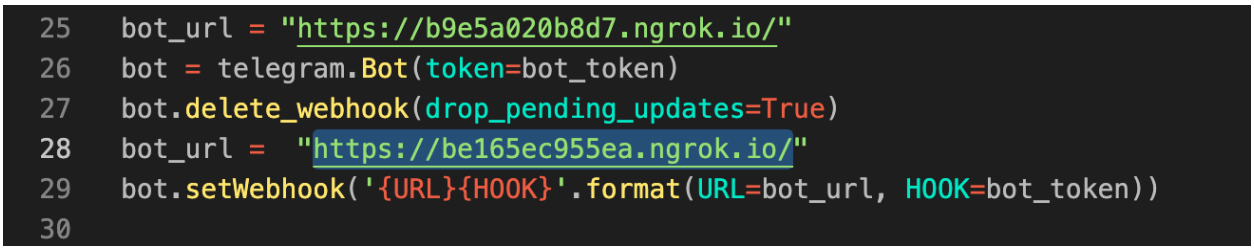
14. Alternatively, you can download the bert_intent_detection.hdf5 file from the below google drive link and then paste it inside the path Chatbot-Telegram-chandra-branch/ (the second github repository that is extracted) folder : https://drive.google.com/file/d/1qVMjq1dJ2fQXxs_M4ZRKskSIUPFzOCdX/view?usp=sharing

15. Download and install 'ngrok' from the following link : https://ngrok.com/download

16. In the terminal, run ngrok using command: `ngrok http 5000`

17. Now, copy the forwarding link and paste it in bot_url in /Chatbot-Telegram/app.py. Make sure there is a slash at the end of the bot_url.





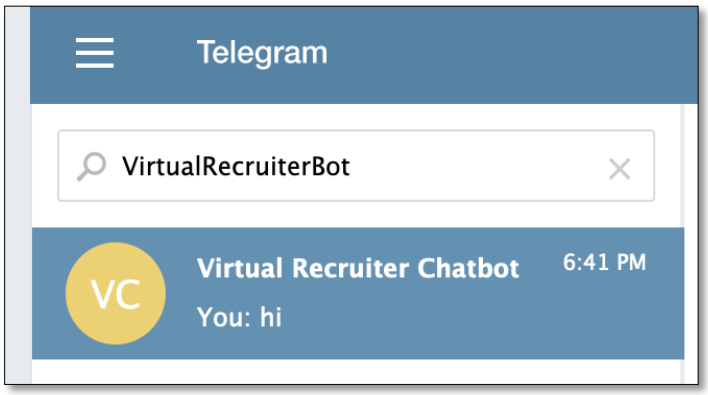
18. Paste the following values for bot_token and bot_username in /Chatbot-Telegram/app.py

```
bot_token = “1537657914:AAEspo0IA7tiW2CCAnWLfsxOd0YabGC-
r50”
bot_username = "VirtualRecruiterBot"
```

```
11  bot_token = "1537657914:AAEspo0IA7tiW2CCAnWLfsxOd0YabGC-r50"
12  bot_username = "VirtualRecruiterBot"
```

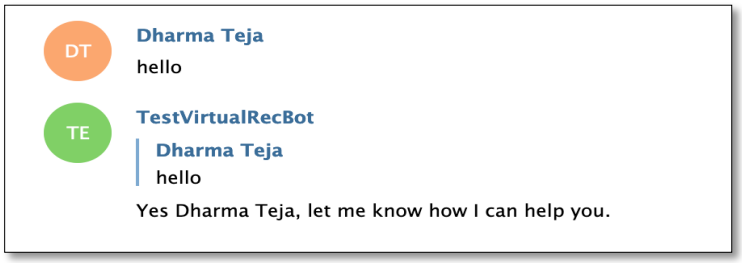
19. Open Telegram in your browser: https://web.telegram.org/ or use the mobile app

20. Search for VirtualRecruiterBot and open the Virtual Recruiter Chatbot.

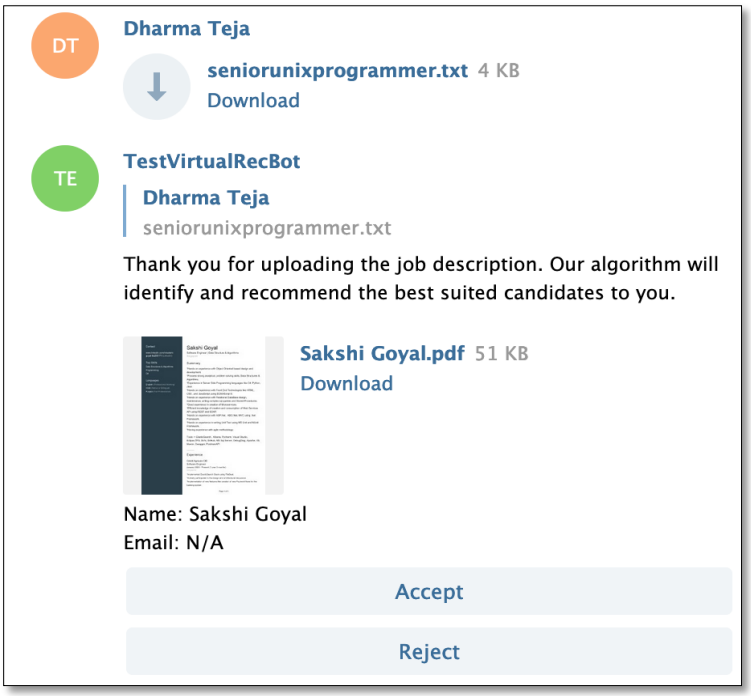


21. Click on ‘START’ and follow the instructions to start the chatbot. Once the bot is ready, run the app.py file in the terminal using command: python app.py or use flask run.

22. Once the server is running, go back to the chatbot in Telegram to check its functionality for the intents it is trained for as shown in the below screenshots.



23. Make sure to upload a .txt file as a job description document. Once a .txt file of job description is uploaded, the bot will search and return the most suitable candidate resumes that match the job description.

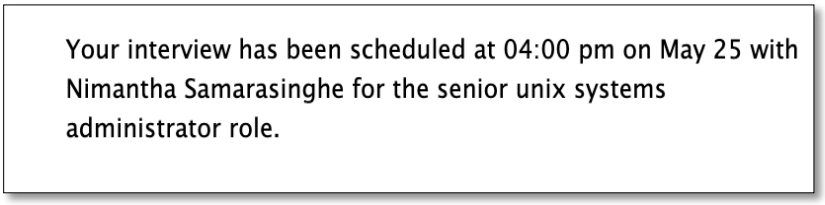


24. The manager can then download and go through the provided resumes and choose to set up an interview for the suitable candidate by clicking on the ‘Accept’ button.

25. Once the manager clicks on the ‘Accept’ button, the bot asks to select a date to set up the interview.

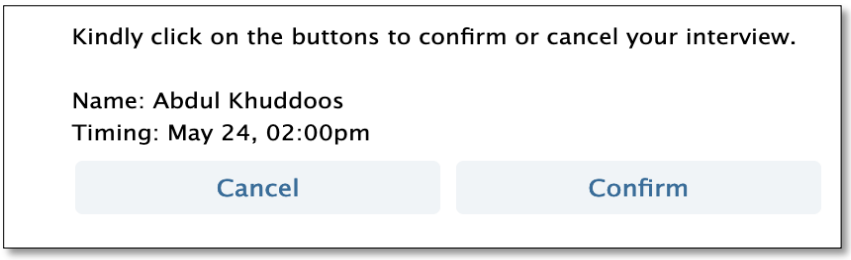
26. Once the date is selected, the bot asks to select a time slot from the available time slots.

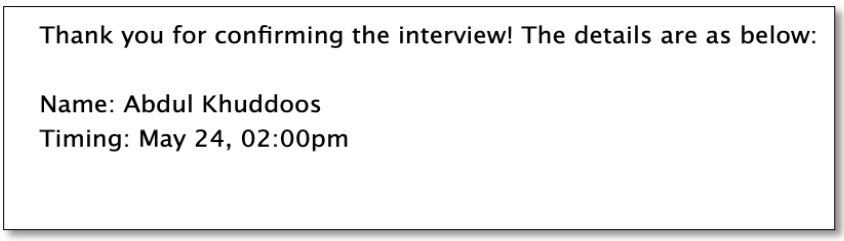
27. Once the slot is selected, the bot sets up the interview accordingly, saves the details into the database and provides an acknowledgement for the same.



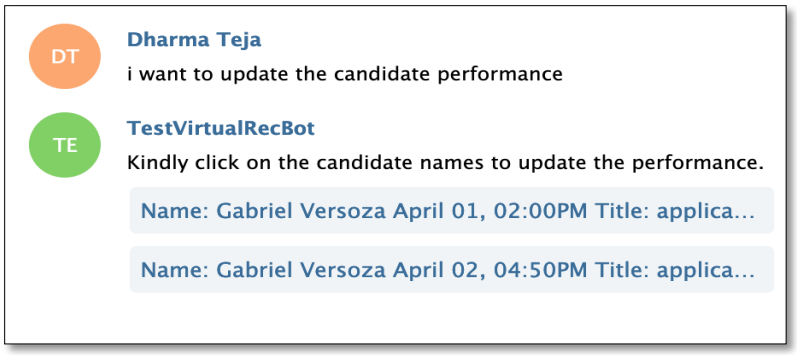
28. The manager can view their scheduled interviews by typing in the appropriate query in the chat box as shown below.

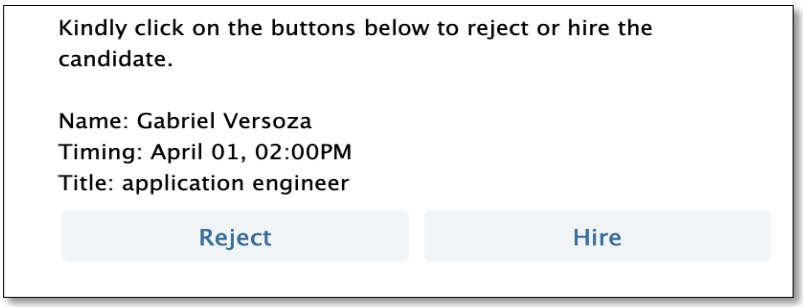
29. This schedule can be confirmed or cancelled by clicking on the corresponding candidate button.

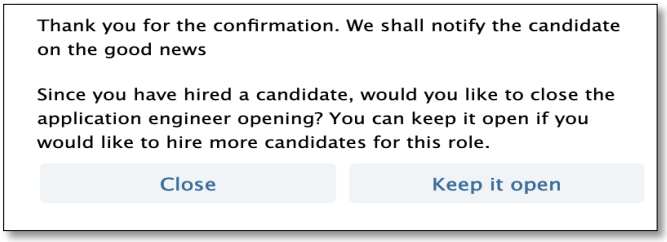


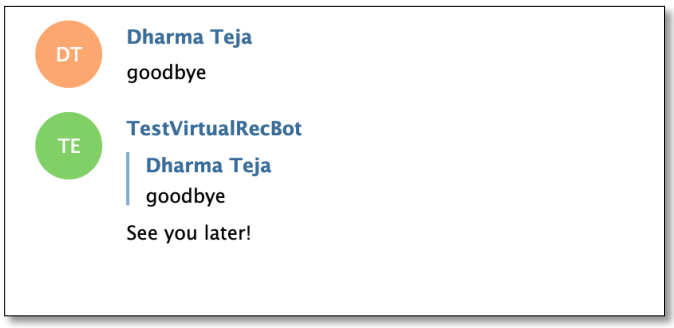


30. The Manager can update the candidate performance, that is, whether the candidate is selected or rejected into the database once their interview is over.









31. Open http://localhost:5000/resumeUpload on your browser to use the candidate's portal for uploading resumes.

If you would like to join Wayne Enterprises, please upload your resume in the below link and we will match your resumes with our job opportunities and reach out to you if your application is successful.

Choose No file selected

☐ Would you like to get weekly updates via email on the status of your application?

Submit