

INF642 : Socio-emotional Embodied Conversational Agents

Lab 4: Evaluation of the model

27/01/2020 – 1:30 pm

Objective: The objective of this lab is to simulate the model's predictions on the Virtual Agent Greta.

Model and Predictions

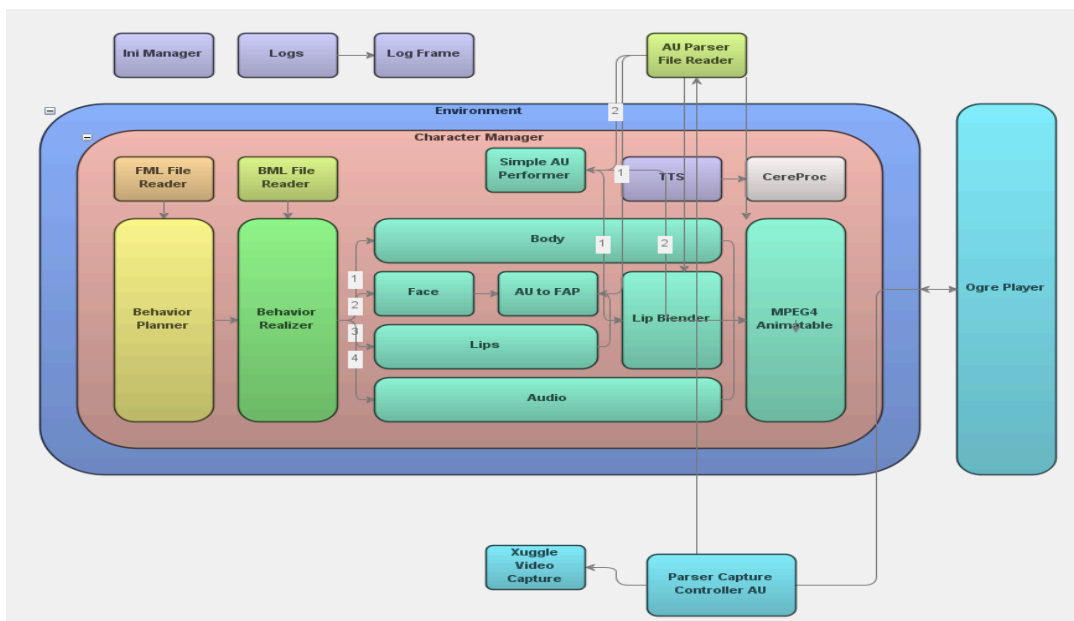
Question 1: After downloading the material of this lab from Moodle, apply the objective measures RMSE, PCC, AHR, and NAHR that were discussed in lab3 to AU01_r, AU02_r, AU04_r, AU05_r, AU06_r and AU07_r in Prediction.csv and GroundTruth.csv.

Greta Virtual Agent

Greta is a virtual character engine that allows generating socio-emotional behaviors in order to build natural interactional scenario with human users. In this part, we're going to install Greta, and simulate it with the ground truth data, as well as the data predicted by the model.

Question 2: Install the release called **Precompiled version with NVBG, MaryTTS and OpenFace** of Greta from <https://github.com/isir/greta/releases>. Read the wiki in <https://github.com/isir/greta/wiki> to understand the different modules and functionalities in Greta.

Question 3: Open the record_AU configuration and use the example found in <https://github.com/isir/greta/wiki/Open-Face-1-integration>, to implement the following configuration in Greta:



Note that you need to select the Character Manager to add components to your configuration. Do not forget to add the component “**Xuggle Video Capture**”.

Select the character manager component, and then choose “LENA” to be your virtual agent. Zoom on the face of Lena, as depicted in the following figure:



Question 4: Simulate the agent using the above configuration, and the .csv file of the ground truth, provided to you. Save the video of the simulation. (instructions : <https://github.com/isir/greta/wiki/Open-Face-1-integration>)

Question 5: Similarly, simulate the agent using the .csv file of predictions. Save the video of the simulation.

Question 6: Extract the sound from the original speaker video, and add it to the agent’s videos, by the mean of any video editor (There might be a small delay between the speaker’s sound and the animation, that’s okay)

Question 7: Discuss and compare the three videos (the original speaker, and the agent’s videos)

Question 8: Propose a way to improve the predictions of the model and reduce noise

Bonus Question : implement this solution

Note: You need to submit a report on moodle explaining your work, your code, as well as the simulated videos. Add to this report a small text with your conclusion from these 4 TPs and comments you have on your work (if you have any)