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**Personal Artificial Intelligence Generator (PAIG)**

**Define Project success:**

The purpose of PAIG is to equip an artificial intelligence with a literal dictionary. It would try its best to find out the semantic meaning behind sentences, and it would generate its own personality through continual experience.

PAIG is the name for the interface that hosts many individual AIs called Personalities. You can interact with each Personality and it will develop a unique identity over time. It does this by persisting its experiences and evaluations to a storage.

A PAIG Personality gains experience in two ways. The first is through chatting where the Personality interacts either the user or another Personality. Alternatively, because generating experience could be very time-consuming the Personality also has the ability to go out and search Google and web pages for content that helps the Personality establish its identity.

Users are also able to peek at the previous experiences and evaluations of an individual Personality. Every Personality continually updates its own psychological profile informing the User what kind of characteristics this Personality is adopting.

The end goal is to create a responsive almost living artificial intelligence, with the storage as the memory section of its brain.

I will know I have accomplished this goal when:

* A Personality can get me or other users to empathize with it.
* The Personality did mature over multiple interactions:
  + expanding its vocabulary,
  + adding mannerisms to the way it responds and speaks,
  + having distinct or subtle speaking differences between itself and other Personalities on the same PAIG
  + Continues to adapt the way it speaks or responds to users the more the user interacts with it.

**Target Users:**

The main demographic for PAIG users are people who always wanted to test out, in a controlled environment, how words and expressions affect different kinds of people. There are people who will test out these expressions for entertainment and some people who will just test out sentences to see the Personalities response. PAIG provides tools that allow these individuals to simulate as closely as possible the context that accompanies these expressions, thus getting more responses that are authentic.

Those that are meticulous about the kind of experiences the Personalities interact with, and those who just want to have fun and test out a whole gambit of experiences.

Of the two, I want this project to cater towards the meticulous individual, giving him a number of tools to help him progress the Personality the way he wants it to be. The person who is more causal will still have access to these tools he just will not take advantage of most of them, but that should not rob him of his experience, he will still be able to create Personalities and he is able to chat and interact with them all he wants.

**Project Backlog:**

User Interface stories

1. As a gamer, I want to be able to name my Personalities, see how many I have created, and look at each individual psychological profile.
2. As a gamer, I want to make scenarios on how I interact with a Personality and then expose my Personalities to that scenario. I also want these scenarios to be reusable.
3. As a gamer, I want to be able to either talk with a Personality, or have a Personality talk with another Personality.
4. As a psychologist, I want to be able to see all of the experiences a Personality has stored.
5. As a gamer, I want several different modes of Personality creation:
   1. Brand new (completely fresh doesn’t know anything)
   2. Defining which words it knows about. (giving it small definitions to be aware of)
   3. Allowing me to create a desired psychological profile for the Personality (telling it explicitly what I want it to be)
      1. Including which words I want the Personality should define as its positive and negative connotations.
   4. Have PAIG create a random psychological profile for the Personality.
6. As a gamer, I want to load up a Personality from a previous experience point, and saving the changes and further experiences done to the Personality as another Personality.

Web mining stories

1. As a user, I want to be able to send a Personality to a website or search for texts to gain experience quickly.

Development stories

1. As the developer, I want a Personality to respond to dialogue much like a human would, with expression in the words and emotional backing.
2. As the developer, I want a Personality to ask if the response it gave to an interaction with the user was ok or not. This way the Personality has a more direct way of knowing that the user is raising it right.
3. As a developer, when I see two Personalities talking to each other, I want to see interesting behavior, like a Personality becoming aggressive towards the other Personality when it thinks a response was insulting. On the other hand, I want to see the Personalities casually maintain the conversation indefinitely because they have good chemistry.
4. As a developer, if I took an earlier version of a Personality and saved it as a new Personality, I would like the two Personalities to develop differently, regardless of the experiences I introduce to both of them. This is mainly to test if my program is capable of perceiving a scenario multiple ways, if this is true theoretically, the “same” Personality could react differently to the same scenario under the same circumstances.

**2 – Week Plan**

For the first two weeks of capstone, my primary focus will be getting to working on the actual AI up and running as quickly as possible. The AI is the crux of the project, thus I want to spend at much time as possible developing and testing it.

Because the AI follows a process when evaluating messages, essentially the AI is the sum of these particular parts: a sentence Reader, a dictionary, a word-compass, and finally a response unit.

**Week 1**

So for the first week I am going to attempt create the first three components: the Reader, the Dictionary and the Word-Compass.

If everything goes according to plan for the first week, the Reader should be able to read out Interrogative sentences or questions and answer type sentences. The Dictionary should be able to store words that the AI has encountered before, and the Dictionary should be able to search up some words on the internet. Finally, the word compass will be able to identify synonyms of the words the AI will be using at its positive and negative connotations.

I will demonstrate how each one functioned by printing onto the console: what kind of question was asked, which of the words were in the dictionary and which words had to be found online and if they found the words online. And Lastly the console will show if the word-compass could correctly compare synonyms by selecting which words in the question were synonyms of the key words in the compass.

**Week 2**

For the second week, I want to get started on the response unit, and the user interface.

The response unit takes the evaluations and conclusions performed between the compass and the dictionary, and format a response according to grammatical rules. For the first week the response should come in the forms of: “yes”, “no”, “unknown” if the AI could not reach a consensus on how to respond to the question.

The interface will also be very rudimentary, for the beginning of the second week the interface will now display how many Personalities the user has, creating a new Personality with the “create from scratch” and the “Add words to add to the Personalities dictionary” options. Additionally the user interface will allow the user to begin a chat session with a Personality, the user interface will print out the responses from the Personality, and the console will print out all the work that the AI did in the background.

For the demonstration the user interface and the IDE’s console will be side by side, when the user clicks on an option on the interface the console will print which command was pressed, and when a question is asked of a Personality all of last week’s console print lines, the ones that showed the AI thinking or going through the motions will be printed onto the console, and the response will appear in the interface.