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A chatbot service for use in video game development

Larsen, Alec John

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Abstract

Character dialogue writing for modern digital games is a difficult process as many of them are non-linear and as such the authors have to write many different versions of the characters' dialogues to compensate for different orders that the players may perform the tasks. The proposed solution is to replace game cut-scenes with interactive dialogue using a chatbot - a computer program that simulates conversation by responding to user's text inputs in a natural language such as English. This falls into the field of interactive fiction. By investigating existing interaction fiction systems it was determined that they are difficult to author, use predefined dialogue and do not handle mood. The proposed solution allows authors to create different non-playable characters (NPCs) using a single chatbot, based on the Artificial Linguistic Internet Computer Entity (A.L.I.C.E.) open source project. This single chatbot acts as the knowledge-base for all the non-playable characters (NPCs) and provides stock responses to the player's inputs. These stock responses are then translated to match the NPC being interacted with. The translation takes the NPCs' dialects and moods into account, generating emergent dialogue. This approach simplifies the authoring approach as the knowledge-base is created once, independently of the NPCs and simple rules are defined that allow each NPC to convey the relevent persona. The general chatbot and NPC translation rules are created using a GUI. The hedonic quality of the GUI was tested by five people via a questionnaire. This showed that while the GUI is easy to use, the general chatbot workflow could be simplified. A test game was created and 35 people rated the system via a questionnaire. This gave a pleasing qualitative result as the NPCs are effective at conveying information, their responses are variable, their personas are evident through their responses and players noticed a change in mood. Theoretical analysis shows that the simple rules can produce extremely variable outputs.