
Abstract: There currently exist a variety of virtual environment creation frameworks where the created content may include scenes, stories, characters and all the relevant components of a functioning scenario. However, in the context of procedurally generated video games where the story isn’t known a priori, behavior of non-player characters (NPC)s is manually specified by designers. These designers may use tools such as finite state machines, behavior trees, or behavior languages like a behavior language (ABL). This research proposes creating behavior for major NPCs, i.e. autonomous characters that will be present throughout a significant portion of the story such that their behavior is autonomous and non-deterministic being driven by the initialization parameters that set the character behavior policy. We will refer to this set of initialization parameters as character values. While agent behavior is composed of numerous elements such as: motion, dialogue, emotion, planning, execution, among others, we will be focusing on the high-level planning aspect. The high-level plan will generate the sequence of actions that an agent will perform. As the scenario unfolds, it is this sequence of agent actions that are later realized as the individual components listed above. The aim of this research is to create an agent behavior generation component that can be integrated with story authoring or procedural content generation frameworks. The resulting system will be capable of spawning unique and autonomous NPC behavior which is driven by the initial configuration the creator specifies for generating the scene.

Committee:

- Professor Oyewole Oyekoya, Mentor, Hunter College
- Professor Devorah Kletenik, Brooklyn College
- Professor Soon Ae Chun, College Of Staten Island