

## **Thesis:** Value and Identity Driven Autonomous Agent Behavior in Virtual World Scenarios

**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 automatically creating behavior for major NPCs, i.e. computer-controlled characters that are present throughout a significant portion of the scenario story. The autonomous and non-deterministic behavior is driven by goals derived from the agent identity profile i.e. a personality profile with a combination of principles and roles. To this end we investigate how long-term autonomy is influenced by an agent's identity and how these findings can be used to direct the behavior of artificial agents. The focus will be on the high-level planning aspect of behavior where plans are formulated to both achieve the agent's goal and do so in a manner consistent with the agent identity e.g. expressing affective elements. Our research aims to implement preliminary work on an agent behavior generation component that is capable of spawning unique and autonomous NPC behavior driven by the agent identity profile and scenario initialization parameters.

### **Committee:**

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