

# Procedurally Generated Background Characters

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Non-player characters in games and simulations often rely on scripted behaviour or simplified decision-making architectures. This can result in behaviour that is not coherent or believable for the player. Similarly the scope of large open-world games with many non-player characters (NPCs) denies designers the ability to extensively hand-craft differences in behaviour in order to convey agent personality.

This project presents a model for NPC behaviour where actions are chosen in a hierarchical manner through the evaluation of functions that map the agent's current state to utility values. Each action is chosen on the basis of specific parameters representing the state of the agent or the environment, and performing actions has an effect on the agent's state. Agent personalities are specified on the basis of the five-factor model, and through procedural generation have unique and intuitive effects on how agents weigh decisions and are effected by actions and events.

The implementation showcases a model that allows for easy specification of game characters that efficiently display unique behavioural preferences. Agents can be easily stored in a compressed state to be generated in real-time and simulated at full-detail, offering potential for use in the next generation of procedurally generated worlds.