



AI Pet Companion System

An adaptive AI-driven virtual pet companion system where creatures evolve unique personalities and behaviors based on player interaction and care patterns.



Team:

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Themes:

- AI as an Adaptive Companion
- AI as a Dynamic Pet

Novelty:

- Multi-layered AI combining genetic evolution with learned behaviors
- Customizable creatures that develop distinct traits and responses based on player interactions
- Dynamic personality adaptation with meaningful consequences if needs are not met



Value:

- Players wanting virtual animal companions
- Game developers looking to create engaging and personalized pet systems
- Educate player on pet care and responsibility



Technology:

- Genetic Algorithms and LLM integration for creature generation and traits
- Behavior Trees for complex pet decision-making and actions
- Heuristic evaluation for mood and needs assessment
- Unity3D for game development and creature animation
- Custom reinforcement learning for behavioral adaptation



Work Plan:

- Shanaya: Genetic algorithm implementation for creature generation & trait inheritance; behavior modeling system design
- Trinity: LLM integration for personality generation; implementation of mood & growth tracking
- Matthew & Luan: Core game mechanics, shop interface, behavior tree implementation, and resource management systems