

ABSTRACT

NAME OF INSTITUTION: De La Salle University - Dasmariñas

ADDRESS: Dasmariñas, Cavite

TITLE: Techniques and Algorithms used in the Artificial Intelligence for the game Asteroids

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FUNDING SOURCE: Personal **COST:** 4,000.00

DATE STARTED: November 1996 **DATE COMPLETED:** February 1997

OBJECTIVES OF THE STUDY:

A. GENERAL

The general objective of the study is to improve the AI engine used in the game Asteroids.

B. SPECIFIC

The specific objectives are:

1. to create an AI engine that incorporates into the computer controlled enemy a set of instructions which will give it the ability to survive and not be destroyed.
2. and to create a computer controlled enemy which can efficiently destroy the human player.

SCOPE AND LIMITATION:

This special problem will only deal with the discussion of Artificial Intelligence in games. This special problem will not cover the topics on how to build a game nor will this teach programming.

METHODOLOGY:

Knowledge acquisition, knowledge manipulation, knowledge organization, and knowledge representation.

OUTPUT OF THE STUDY:

A new AI engine on the game Asteroid was developed in order to demonstrate the new techniques developed by the proponent in creating artificial intelligence for games. The new techniques include: modification of collision box technique for use in determining distances, infinite space technique, and the patterned evasion technique.

CONCLUSIONS:

Through the combined existing techniques and algorithms used in artificial intelligence in games, and the techniques developed by the proponent, the computer-controlled enemy in the game Asteroids became more intelligent.

RECOMMENDATIONS:

Improvement on the AI engine developed should be focused on the evasive manoeuvres of the computer-controlled enemy against the asteroids in the game environment. Another state, where in the enemy would also evade asteroids, should be added in the FSM.