

# PROJECT SYNOPSIS

Subject/ Sub. Code: Minor Project (21IS6P01)

Credits: 02

Batch No: A3

Date: 01 - 06 - 2024

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**Project Title** : Reinforcement Learning (RL) on Asteroids Arcade game

**Type of Project** : Unsupervised Machine Learning

**Objective:** To train a RL model agent on an arcade game with suitable constraints system to maximize the spaceship's life.

**Brief description:** Developing a custom Asteroids – arcade game using Pygame and train a RL agent to master it by implementing a suitable customreward-penalty system to optimize the spaceship's survival and performance

**Software requirements:** Python 3.10, Pygame 2.5.2, Pytorch 2.3.0, Numpy 1.26.4, MacOS 14/ Windows 11.

**Hardware Requirements:** i5/i7 or M1/M2 processor, 8GB RAM (16GB recommended), 8 core Neural Engine or higher, 256GB Disk Space or higher, NVIDIA GPU with CUDA support (recommended)

## Internal Guide :

**Name:** Shashank Dhananjay

**Designation** : Assistant Professor

**Department** : Information Science and Engineering

**Remarks (if any):**

**Signature:**