



## Space invaders using motion tracking (Code:'GuardLink');

### PURPOSE:

The purpose of integrating hand tracking into a space invaders game is to enhance user engagement and accessibility. By allowing players to control the game using natural hand gestures it aims to provide a more intuitive and immersive gaming experience. By using the pygame, OpenCV, and Mediapipe libraries, this project aims to offer a unique gaming experience that combines classic space invader gameplay with gesture-based controls;

### FEATURES:

Players can control their spaceship's movement and firing simply by using hand gestures eliminating the need for traditional controllers this innovative adds a new level of interactivity and immersion, making the gameplay more intuitive and engaging. The game utilizes the OpenCV and Mediapipe libraries to capture hand gestures through the user's webcam;

#### **i) Supported hand gestures:**

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|---|--|--|
| - <b>Move Left:</b> Move the player's spaceship to the left by moving your hand left; | - <b>Move Right:</b> Move the player's spaceship to the right by moving your hand right; | - <b>Shoot:</b> Make a specific hand gesture (e.g., a fist) to fire bullets from the player's; |
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#### **ii)Score Tracking:**

- The game keeps track of the player's score, updating it as aliens are destroyed;

#### **iii)Graphics and Sound:**

- Pixel art-style graphics and animations for the player's spaceship, alien invaders, and background;
- Retro-inspired sound effects and background music to enhance the classic gaming experience;

### LANGUAGES USED:

- Programming Language:\* Python;
- Libraries Used: Pygame, OpenCV, Mediapipe;