

# Technology for Special Needs Education

## Project



### Hands Free Gaming

To enable people with  
*Physical and  
Mobility Impairment*  
play games.

# The Problem

Games have become essential part in our day to day lives and an important stress reliever for today's generation but people with physical and mobility impairment face various difficulties which can be tackled with technology.

This presentation discusses mainly about playing video games and how technology can be used to help people with physical and mobility impairment allowing to use keyboard buttons by making some gestures.



A close-up photograph of a person's hand using a stylus to interact with a tablet. The hand is positioned on the left side of the frame, with the stylus tip touching the screen. The background is blurred, showing some bokeh lights. The text 'The solution' is overlaid in white on the left side of the image.

# The solution

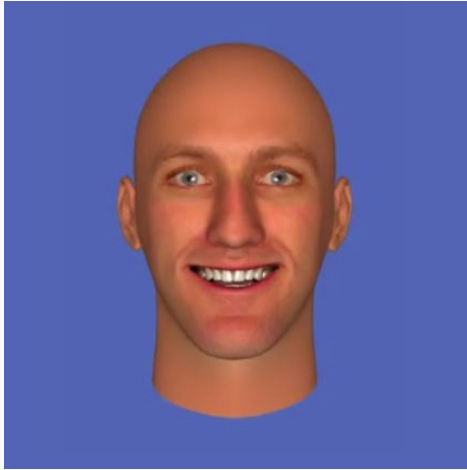
## Image Processing

The buttons in the keyboard can be stimulated by reading the head movements using image processing allowing user to play games without even touching the keyboard.

# How it works

The user can control the game using his head movements  
As shown below,

He/she will be able to simulate the up, down, left and right key presses.



No face movement





Right movement



Left movement



An aerial photograph of the New York City skyline at dusk. The Empire State Building is prominent in the center, with its spire reaching into the dark sky. The city lights are visible, and the water of the harbor is in the background. The text is overlaid on this image.

# The technology:

# Python + OpenCV

# Working model



Incoming video feed

Use of OpenCV

Simulating the key-press



# Thank You

