

# Developing a PS Vita game for cerebral palsy patients

**Student:** Junaid Ahmed  
**Student Number:** 120481730  
**Email:** j.ahmed2@ncl.ac.uk

**Supervisor:** Dr.Gary Ushaw  
**School of Computing Science**

## Aim:

Use the PS Vita system to gather touch data from patients playing a simple pattern matching game.

## Introduction:

Exercises for cerebral palsy patients in rehab can tend to get very monotonous and boring, resulting in a lack of interest and half-heartedness in performing them.

Some of these exercises involve

- shape drawing to work on the coordination of the fingers,
- measuring the strength of the grips using pressure measuring equipment

By making this exercise into a game, it would make it much easier to both complete the exercise as well as measure performance.

The PS Vita system comes with all the features best equipped to run such a game.

## PS Vita system:

The PlayStation Vita is a touch based hand held gaming console that has a very accurate 10 point touch screen on the front as well as a pressure sensitive touch pad on the back.

This allows for very impressive feedback when say gripping the device or drawing patterns on the screen.



## Making the game:

Initially I had planned on making a game that shows a pattern on screen and then asks the user to draw it out. Depending on whether the pattern matches, a butterfly flies along the outline of the pattern.

The final implementation was different to this aim. The user draws along the screen and the touch data is recorded. A butterfly flies along the line drawn and the touch data is recorded to test how smoothly the user was able to draw and whether they suffered from sudden spasms.

## Conclusion:

The game developed can be completed to perform exact pattern matching and grip strength measuring games. Data from the results will help make analysis of the patient more efficient and hopefully aid in the treatment of cerebral palsy.