Part III Individual Project Brief
Alleviate children's health issues through games and Machine Learning

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- Problem

Children can be subject to illness since their birth, identifying their problems at a early stage can lead to more consistent improvements for them. This is mainly dependent on neuroplasticity (brain's ability to reorganize itself throughout life), which is way higher during the first few years of our life. Children may be affected by different types/forms of disorders like disability and autism. These can be caused by factors such as: genetics, enviroment, diet and lifestyle. Therefore, prevention can play a crucial role in decreasing the number of children's effected.

- Goals

This project aims to:

1. Outline and categorize the main types of illness children's can suffer
2. Explain why these problems appear and how to prevent them
3. Research different ways to identify and mitigate their problems using games (to increase thier level of engagement) and Machine Learning (to identify patterns and suggest alternative approches).
4. Produce both a hardware and software solution to aid in the mitigation of these issues

- Scopes

The first part of the project will focus on doing background resarches and creating a hardware implementation. Different intervention approaches such as The Early Start Denver Model (ESDM) and Applied Behavior Analysis (ABA) and their outcomes will be considered. In addition to this, will be studied technologies used in hospitals to detect Children's isssues. During the second part of the project software games for the created hardware will be developed and/or existing ones will be used . Finally, using datasets from medical records it could be possible to use machine learnig to find patterns and identify models to improve the results obtained originally.