

AURAL IMMERSIVE VR

Extending Wearable Immersive Virtual Reality with AURAL
Interaction



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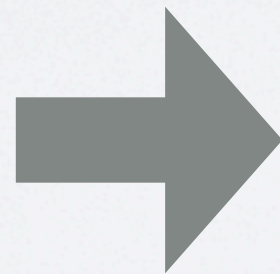
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OUR CHALLENGE

Add **vocal interaction** to a VR application to **help nonverbal children** in their therapy.

Main **Targets:**

- Nonverbal Children



Their **Needs:**

- Improve **speech capabilities**
- Learn to **speak**
- Improve **concentration**

OUR CHALLENGE

Their needs... are our **goals**:

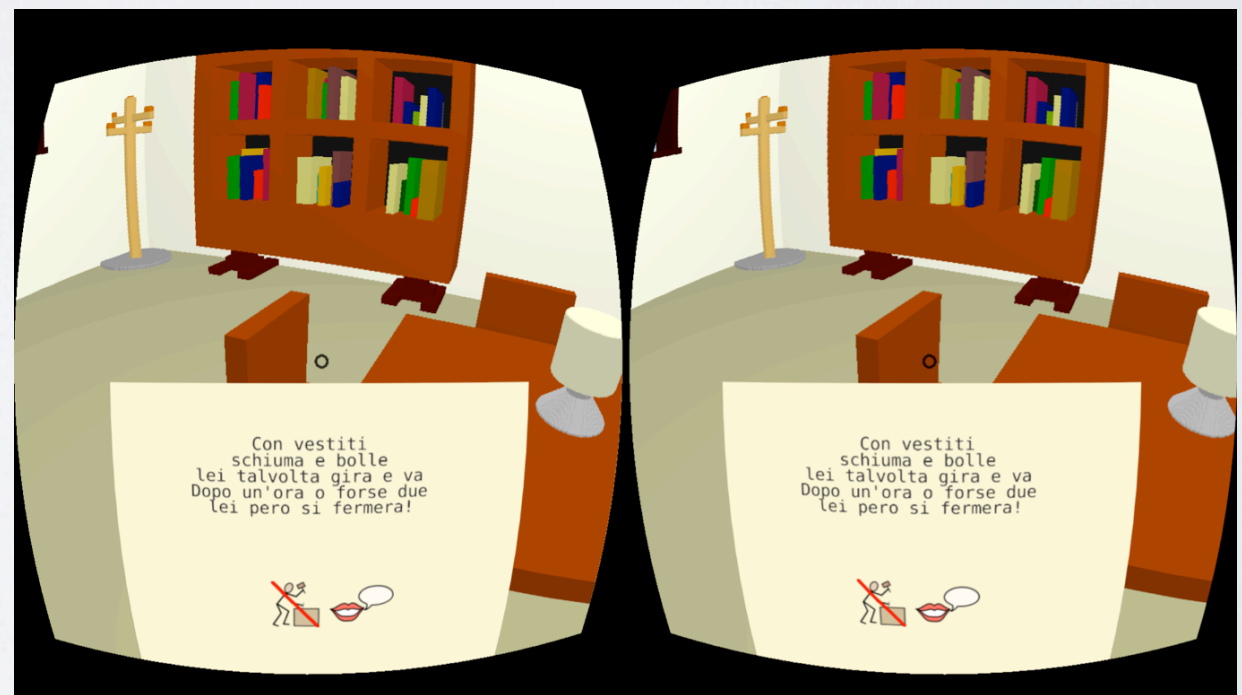
- Develop a **tool** that helps them to speak and to focus in a **playful** way
- Improve speech capabilities using audio feedback and speech recognition

Up to now the State of the Art is “Virtual Reality Exposure Therapy (**VRET**)”

OUR SOLUTION

A **Web-VR** Application that can be used with a **Smartphone** and a **VR-Visor**.

Users **interacts** with the application using **vocal commands** and **exploring** the VR world



OUR SOLUTION - SCENARIOS

Roger gives a Clue

The clue is displayed
and the child has to
solve it



Finding the Object

After he has solved the
clue, he has to search
around the house to find
the object



OUR SOLUTION - SCENARIOS

The Treasure Hunt Continues



If there are other objects to find
Roger gives
another clue,
otherwise he finds
his charger and the
hunt ends.

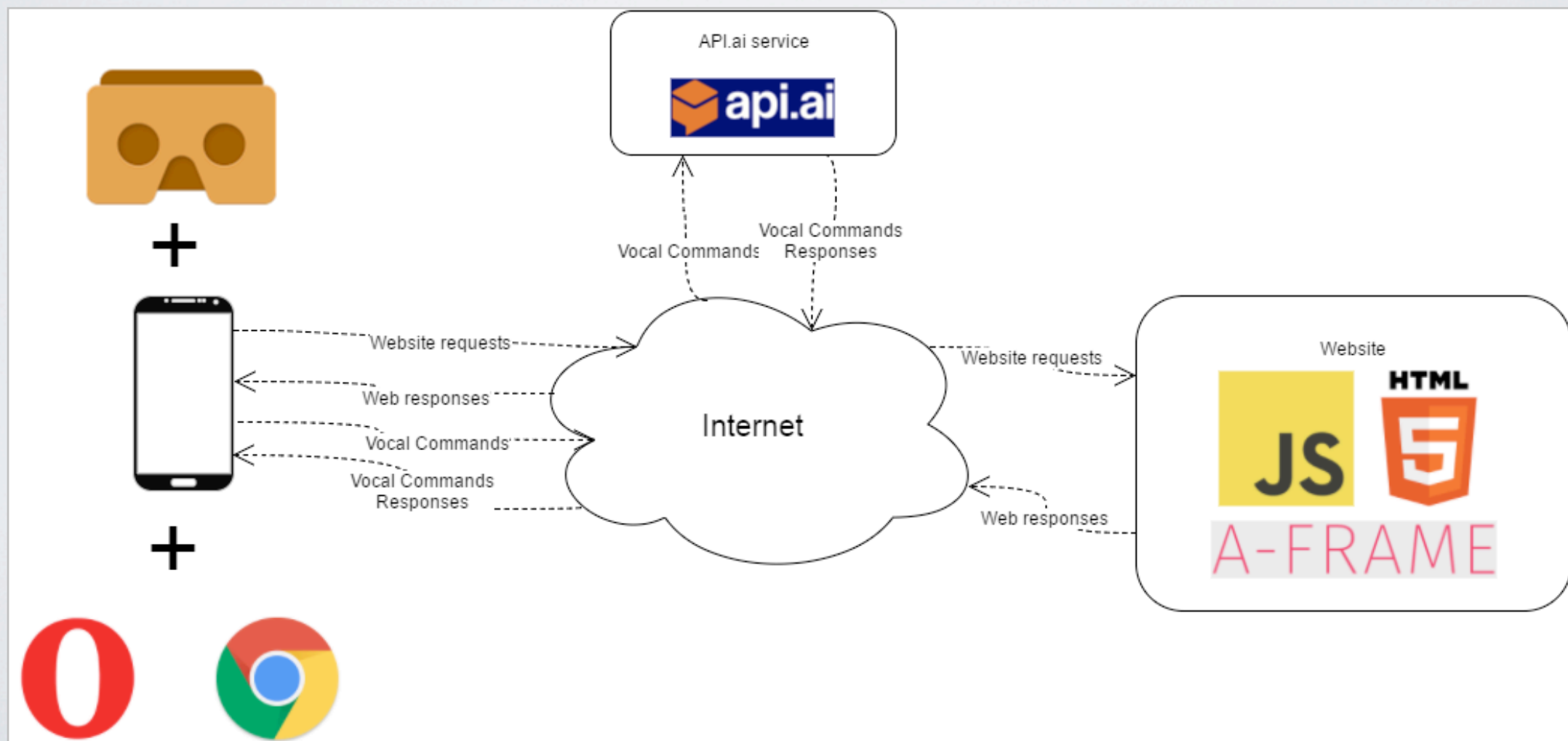
OUR SOLUTION - USER INTERACTION

The **Interaction Paradigm** is simple:



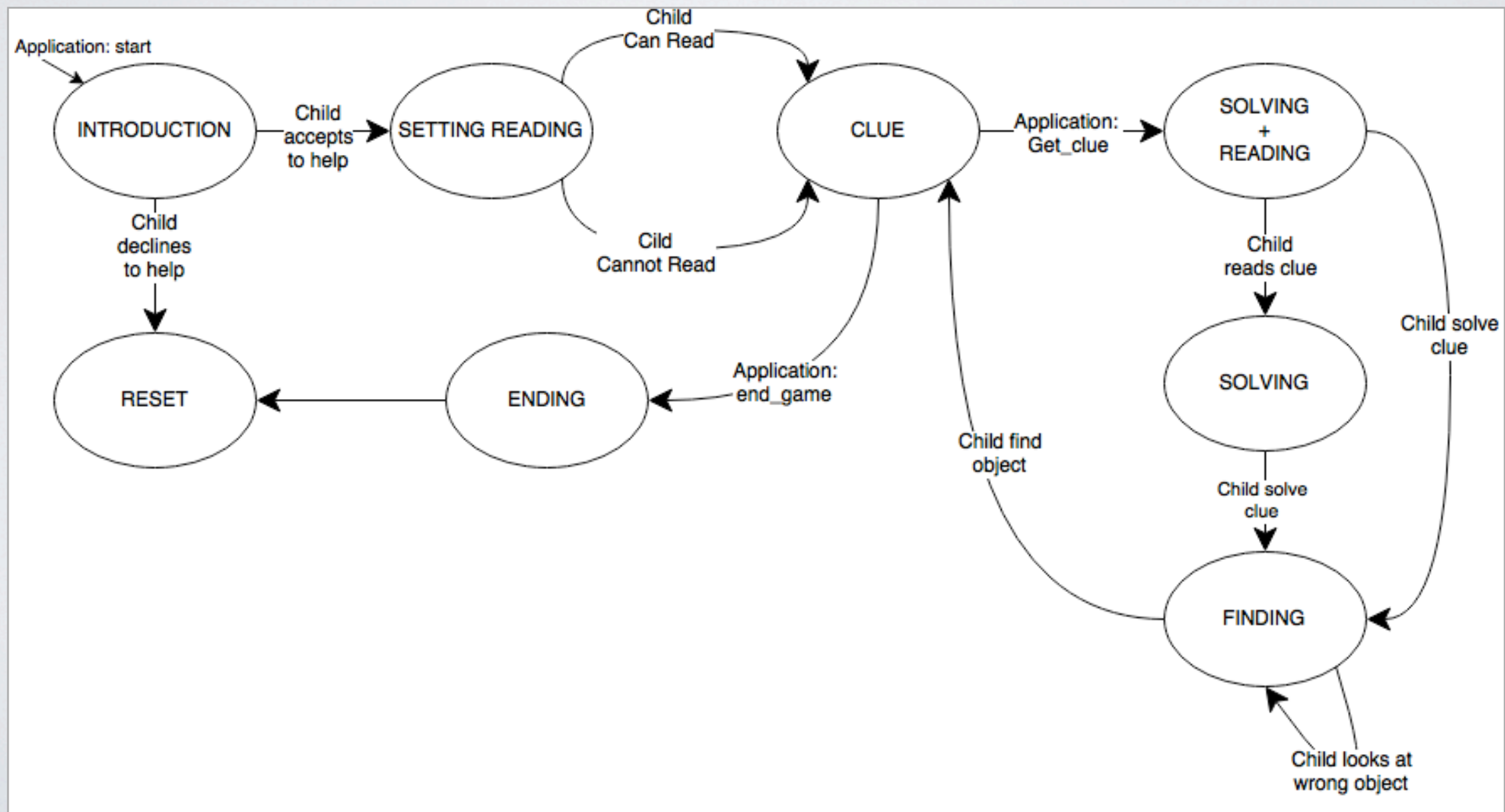
OUR SOLUTION - IMPLEMENTATION

The web application is composed by:
A-Frame + Javascript Controller
+ API.ai Agent



OUR SOLUTION - IMPLEMENTATION

The **state** of the Treasure Hunt is kept
by the internal **API.ai Agent Context**



VALUE PROPOSITION

Why it's good

- VR helps **concentration**
- Game-Approach helps **motivation**
- Vocal commands helps to **improve speech capabilities**
- Web Application is **portable**

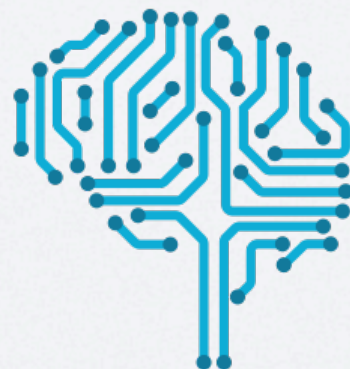
Is it the best?

- It is the beginning of the journey and not the summit -

It can be seen as a **start point** for something **bigger**

FUTURE WORKS

- **Statistics:** Collecting data to help therapists.
- **Personalization:** Evolving system for a better experience
- **Improve Compatibility:** To reach more users
- **More Modularity:** Improve modularity to have more variety of content



Thanks for your attention!

You can try the application at:
<https://fmarocchi92.github.io/AUII6I7/>