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NEURAL NETWORKS IN RESEARCHING AND IMPROVING ASD SYMPTOMS

Research Article

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Chapter 1

Introduction

1.1 Abstract

A condition that needs a lot of care, autism is largely misunderstood, especially at a young age. Imagination of children with ASDs is captive with no way to be expressed, having difficulties in developing an understanding of spoken language so they resort to nonverbal communication.

This research paper aims to study patterns in cognitive behavior of people with ASD to see if we can facilitate them with better means of education through Game Theory. To support the research we implemented neural networks to see if/ how much people with ASDs can benefit from such an approach. By developing a program like this we want to also help medical professionals with a better understanding of them. Besides this, the program can help in improving their communication skills /and find a better way to communicate ideas and emotions.

Key Words: ASD, children, communication, AI, neural networks, graph theory, game theory

1.2 Introduction

A condition that needs a lot of care, autism is largely misunderstood, especially at a young age. It makes it difficult to communicate, thus dissociating people with ASD from the outside world. Their imagination is captive with no way to be expressed, having difficulties in developing an understanding of spoken language so they resort to nonverbal communication. This is often misunderstood, slowly developing and accumulating frustration that can eventually be released in an unhealthy manner, fact that leads to rigidity, anxiety and even depression when it comes to social interactions. ASDs have a negative effect on children's developing education, their goals and strategies to accomplish them.

In this field of study there are limited resources dedicated to autism, especially for children, that's why we're aiming with this research paper to study patterns in cognitive behavior of people with ASD to see if we can facilitate them with better means of education through Game Theory. To support the research we implemented neural networks to see if/ how much people with ASDs can benefit from such an approach.

By developing a program like this we want to also help medical professionals

with a better understanding of them. Besides this, the program can help in improving their communication skills and find a better way to communicate ideas and emotions.

Chapter 2

Development of the Application

2.1 Components

2.1.1 Speech Recognition

For the speech recognition component we used Keras for its deep learning capabilities.

List example

Python Example

```
print("Hello world")
```

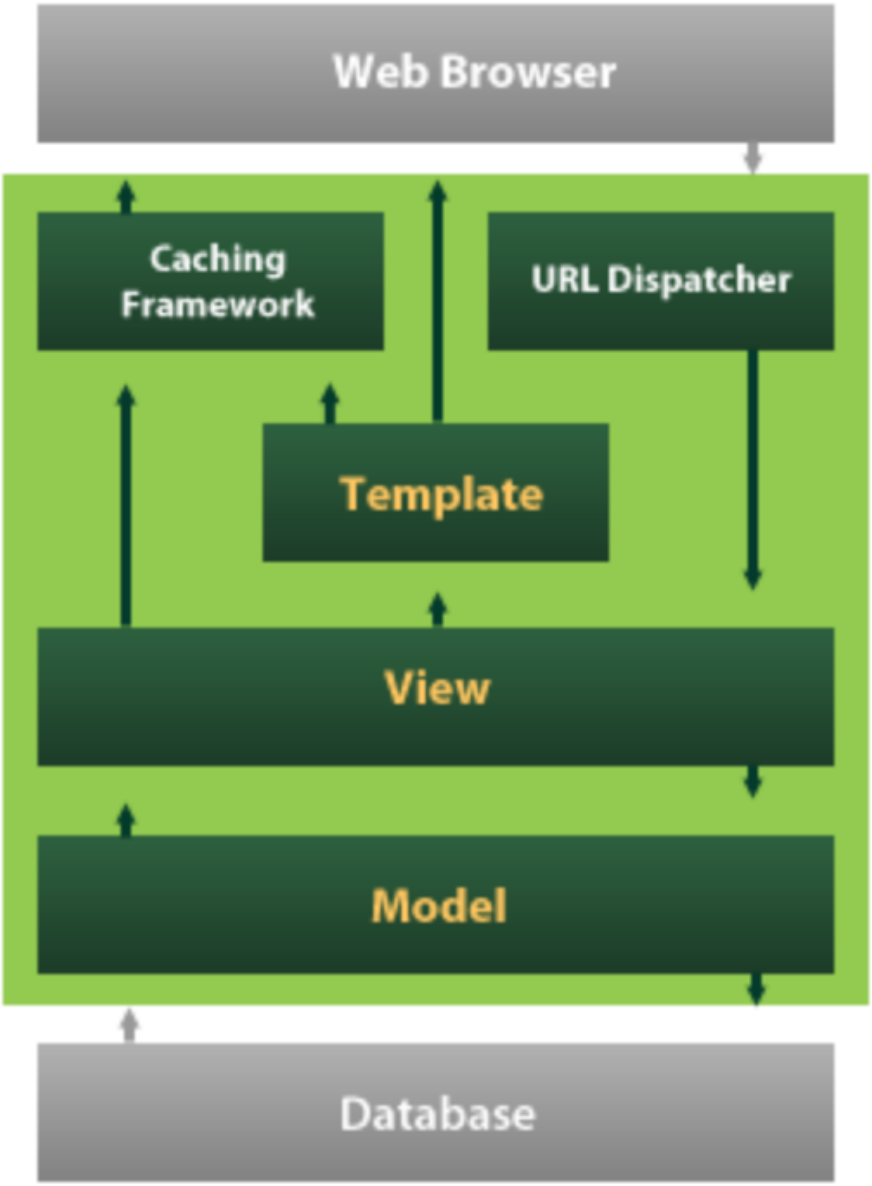

Figure 2.1: Django MVT diagram
https://sourcedexter.com/python-django-full-stack/

Chapter 3

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