TREADR Autism Awareness Platform

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Title: TREADR - Technology Revolutionizing Early Autism Detection and Resources

1. **Problem Statement**

Autism is a complex condition with a broad spectrum of symptoms. Many people, including parents, teachers, and the individuals themselves, may not fully understand what autism entails. This lack of understanding can lead to misconceptions and stigma, which can negatively impact the individual's life. The website aims to educate the public about autism, providing resources that are both informative and easy to understand.

2. **Objective**

The website aims to educate the public about autism, providing information that is both informative and easy to understand. This includes providing resources for children and adults, and offering a tool for practicing facial recognition, which is a common challenge for people with autism.

Community Connection: The website also aims to connect individuals with autism with others who can provide support and understanding. This includes a contact form for visitors to reach out to the organization, and a map to help individuals find help resources.

3. **Description**

This documentation provides an overview of the TREADR website, which is designed to promote compassion and understanding for autism. The website is structured into several pages, each serving a specific purpose. The website is built using HTML, CSS, and JavaScript.

Website Structure

The website is structured into the following pages:

- **Index.html**: This is the homepage of the website. It provides an overview of autism and includes a button to switch between explanations for children and adults.
- **FaceTrain.html**: This page provides information about the difficulty people with autism have in recognizing faces. It includes a tool for practicing facial recognition and a tool for reflecting on one's own facial expressions.
- **Contact.html**: This page provides a contact form for visitors to reach out to the organization.
- **SeekHelp.html**: This page provides a map to help individuals find help resources.

Each page is linked through a navigation bar that appears on every page. The navigation bar includes links to the homepage, the face training page, the contact page, and the seek help page.

Styling

The website uses CSS to style the various elements on the pages. The CSS is contained in the style.css file and is linked in the <head> section of each HTML file. The CSS includes styles for the body, headers, paragraphs, buttons, and various other elements.

Interactivity

The website uses JavaScript to add interactivity to certain elements. The JavaScript is contained in the script.js file and is linked at the end of each HTML file. The JavaScript includes functionality for switching between children's and adults' explanations on the homepage, refreshing the image on the face training page, and navigating to a new page when a link in the navigation bar is clicked.

Also present is an emotion prediction system which makes use of the device webcam to determine what emotion a person is exhibiting based on their facial expression. This is achieved using AI image recognition through a model built with TensorFlow and exported as a Tensorflow.js file. The model is included in the repository, but is hosted in Google Cloud through Google Cloud Console.

Contact Form

The contact form on the contact page is a simple form that collects the user's first name, last name, email, phone number, and message. When the form is submitted, the data is sent to the server.

Map

The map on the seek help page is generated using the HERE Maps API. The map is centred on the user's current location when the "Show my location" button is clicked. This feature is intended to be used to locate nearby psychiatric offices near to the user, but was purposefully left incomplete for the prototype as it requires a premium API key from HERE.

4. Evaluation Metrics

The project is considered successful if a number of autistic persons would consider the platform useful as determined by an improvement in their facial recognition and/or facial expression. The technical metric would be that the facial recognition software successfully identifies emotiveness based on facial expression, which it does with the exception of people with heavy amounts of facial hair.

5. Team Members

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6. Conclusion

The TREADR website attempts to address the issues of autism misinformation and education, as well as a lack of free tools for people with autism. It accomplished this by giving educational information regarding autism as well as a tool for practicing facial recognition and self-expression, which are typical difficulties for persons with autism. It also attempts to include a map to assist people in locating aid options.

There is, however, always the opportunity for improvement. The website's interactivity is one area that could possibly be strengthened. While it presently has a facial recognition utility, it may benefit from more interactive aspects that interest users and encourage them to stay on the site for longer. Furthermore, the website might think about incorporating a forum or discussion board to allow users to connect with each other and share experiences.