

Autism Child Survey and Discussion

Ramya,Dr.Savithri

Abstract— Learning disability (Dyslexia) is a neurological disorder. It affects the brains ability to receive process, store, respond to and communicate information. It is a language based disability in which a person has trouble understanding written words. It may also be referred to as reading disability or reading disorder. Some states and schools do not allow the term dyslexia to be used to describe a student's reading difficulties. Our dyslexia information statistics tells us that 70 – 80% of people with poor reading skills across the world. In India 12 million children were affected from dyslexia. This paper presents a brief overview of dyslexiaand how it affects the population by adopting Artificial Neural Network techniques which has been appliedsuccessfully to solve problems in numerous fields. This methodology helps to identify and diagnosis problem using Artificial Neural Networks.

Index Terms— Neurological disorder, reading disability, dyslexia, Artificial Neural Networks, Mental disorder, Disability, Loss of Memory.

1. Introduction

Dyslexia was identified by Oswald Berkhan but the term *dyslexia* was coined in 1887 by Rudolf Berlin, an ophthalmologist. He used the term to refer to a case of a young boy who had a severe impairment in learning to read and write despite showing typical intelligence and physical abilities in all other respects. In 1896, W. Pringle Morgan, a British physician published a description of a reading-specific learning disorder in a report titled "Congenital Word Blindness"[1]. The distinction between phonological and surface types of Dyslexia is only descriptive, and devoid of any etiological assumption as to the underlying brain mechanisms[2]. However, studies have alluded to potential differences due to variation in performance[3]. Systematic approach detecting dyslexia using artificial neural network is applied in order to segregate the stage of disability in person for better understanding[4].

2. Methodology

In the presence study image segmentation technique based on edge detection algorithm are examined to extract the boundary of left

temporal lobe in the brain. The feature are extracted and used as inputs to the artificial neural network for the classification. Wavelet algorithm is applied to know the classification during contraction and relaxation. This will provide a faster solution and effectively for classification of normal and abnormal dyslexia where it reduce the burden of the conventional way of manual observation through images.

In conclusion these methodology provide a reliable to detect dyslexia and convey used effectively and secondary observer in clinical decision making to detect the damage left temporal lobe in the brain with its inner and outer wall.

The purpose of this study is to investigate the inter observer variability of manual and also of computer software measurement of inner and outer wall. To investigate whether inter observer errors measurement of inner and outer wall in left temporal lobe in the brain can be detected. To find out the variability using image processing and classification with neural networks provides proper diagnosis for the patient with different stages. To conclude that an automatic procedure can reply the manual procedure and leads to an improved performance.

III. Results and Discussions

64 slice CT Scan image is taken as an input in order to diagnose whether the image of the person has dyslexia and if so the stages of the disability is classified based on the study applied using image processing and classification with neural networks for proper diagnosis.

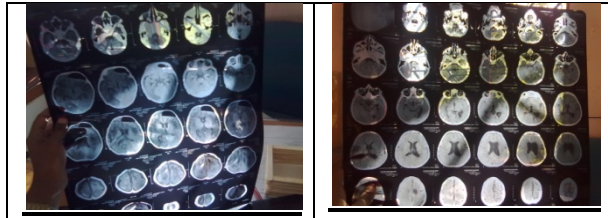


Fig 1. CT Scan input image



Fig 2. Dyslexia symptom

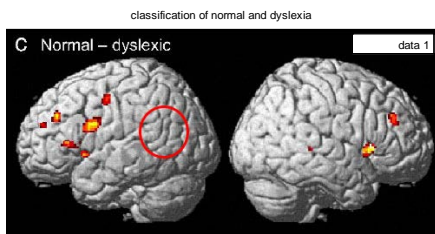


Figure represent normal brain and dyslexic brain

Classification with Neural Networks

The segmented image is given as an input in Radial Basis Function classifiers, where three tier layers helps to classify the input, output and hidden layer information and displays the output with single data.

The Fig 1. CT Scan Input images of the autism children is taken for processing and the features to be extracted based on Name,

Age and Disability of the children are taken and the same were used for classification to know about the stage of children affects with autism and based on the training and testing the result has been evaluated using confusion matrix. The data collected is based on the child age group of the children who treated as special child. The original dataset of the children are gathered and evaluated.

S.No.	Name	Age	Disability
1	P..Jaipradap	4 years	Microcephaly- Mental retardation
2	K. Jayasudhan	5 years	Autism spectrum disorder
3	M.Nitish	5 years	Down syndroe(trisomy) - MR
4	R. Pooja	5 years	waardenberg syndrome, hearing impairment , mental retardation
5	M.Deepen raj	5 years	Attention deficit hyperactivity disorder Sensory processing disorder
6.	Ameem Ahamed	4 years	Cerebral palsy Mild developmental delayed
7.	A. Rohit	5 years	Autism spectrum disorder
8.	S. Rishidharan	5 years	Mild mental retardation Mild Autistic feature
9.	Jamal Mohammad	5years	Attention deficit hyperactivity disorder Delayed speech development Mild mental retardation
10	K.Nikilesh	5 years	Autism spectrum disorder ADHD

11.	D. prasanth	5 years	Microcephaly (MR)
12.	Jersiya	5 years	Mental retardation Attention deficit
13.	Nitesh roshan	5 years	✧ Autism spectrum disorder ✧ Mild mental retardation
14.	Shobika	5years	Autism spectrum disorder features Mild mental retardation
15.	R. Tharika	5 years	Down syndrome (severe) Mental retardation
16.	Praveen maharajan	5 years	Autism spectrum disorder Mild mental retardation
17.	Tamil selvam	6years	Moderate mental retardation
18	Deepak	6 years	Mild mental retardation
19.	Revathi	6 years	Mild mental retardation Hearing impairment
20.	Sai ram	5years	Autism spectrum disorder Developmental delayed
21 .	Neha shree	5 years	Autism spectrum disorder

4. Conclusion

Our proposed system helps to identify the different stages of dyslexia and based on the stages the treatment may be given to the special child. This research helpful in medical field where such research is not much implemented so far. This system is also referred as second practitioner to the clinical triats.

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In future, the research can be implemented to find the way such that without surgery any type of clinical type of technology can be applied to the special child to increase their attentation and reduce mental retardation.

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