SIMATS ENGINEERING
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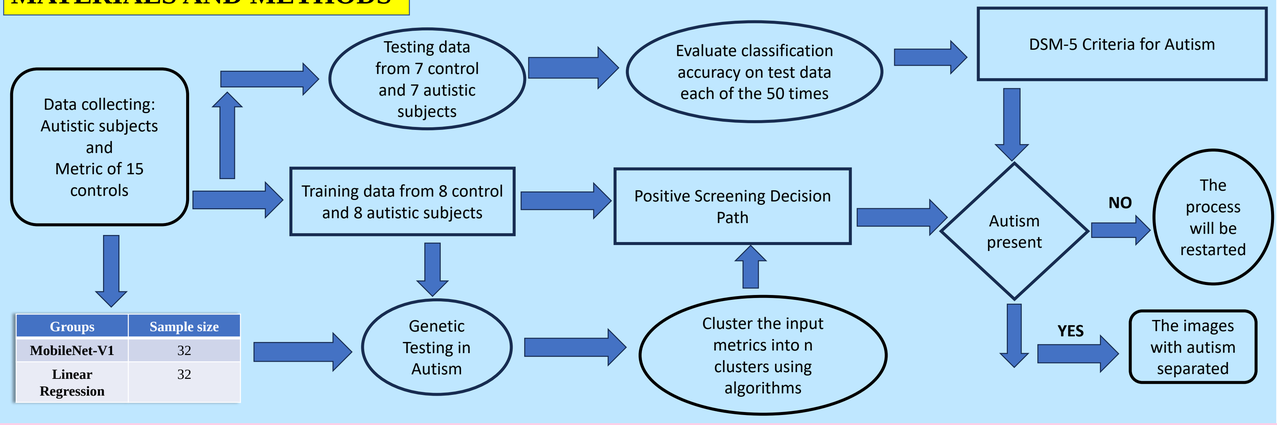
Employing Visual Exploration of Images to Diagnose Autism in Children using Hybrid MobileNet-V1 Algorithm Comparison with Logistic Regression Algorithm to Improve Accuracy

INTRODUCTION

- A complex group of neurodevelopmental disorders known as autism spectrum disorder (ASD) typified by difficulties with social interaction, communication, and repetitive behaviours.
- The complexity of gathering and processing the database for the selected task, as well as locating and removing incomplete data that needs operator assistance are the main areas of focus for the current research.
- The Novel of MobileNet-V1 algorithm is compared and get more Accuracy value than Logistic Regression Algorithm.
- The primary objective is to determine how to diagnose autism in children by using different machine learning algorithms, such as the Logistic Regression algorithm and the Hybrid MobileNet-V1 Algorithm, to visually explore images.

MATERIALS AND METHODS



Groups	Sample size
MobileNet-V1	32
Linear Regression	32

RESULTS

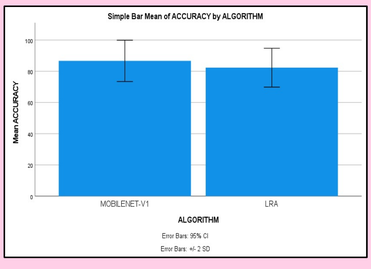


Fig.1.MobileNet-V1 and Logistic Regression Algorithm.
X axis : MobileNet-V1 vs Logistic Regression Algorithm,
Y axis : mean accuracy direction +/-ISD

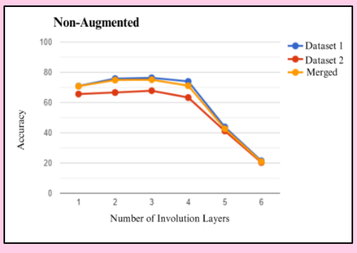


Fig.2. Non-Augmented graph represents,
X axis : Number of Involution Layer of 2 datasets.
Y axis : Accuracy of 2 datasets.

Table.1. Represents the group significances from the analysis of the dataset , Examination on classification of accuracy rate of two deep learningalgorithms,MobileNet-V1 and Logistic Regression Algorithm .These statistics provides a comprehensive overview of the performance and reliability of both classifiers in the analysis.

	Equal variance	Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Accuracy	Assumed	.018	.893	2.725	62	0.008	4 .375	1.606	1.165	7.585
	Not Assumed			2.725	61.758	0.008	4.375	1.606	1.165	7.585

DISCUSSION AND CONCLUSION

- Based on T-test Statistical analysis, the significance value of p=2.725 (independent sample T - test p<0.05) is obtained and shows that it is not statistically significant difference between the group 1 and group 2.
- The Statistical results on accuracy achieved with IBM-SPSS, confirming that the accuracy of MobileNet-V1 Algorithm (86.69) is superior to that of Logistic Regression Algorithm (82.31).
- The current research lie in the complexity of collecting and processing the database for the chosen task ,as well as identifying and eliminating incomplete data , which requires operator assistance.
- The future scope of this work involves implementing appropriate preprocessing, feature extraction, and selection to achieve a increasing accuracy in detection.

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