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## Classification Autistic Spectrum Disorder with Selected Features

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Abstract: In this paper, feature selection technique (FST) namely Chi-Square (CS) has been used for feature selection. The filter based CS is a ranking method. The FST key goals of improving classification efficiency and reducing feature counts. Naive Bayes (NB), K-Nearest-Neighbour (K-NN) and Support Vector Machine (SVM) with RBF kernel considered the classification methods on Autistic Spectrum Disorder (ASD) children dataset. Comparison to the non-reduced features and reduced feature of ASD datasets the reduced feature give up enhanced results in all classifiers NB, K-NN and SVM. Finally, minimum feature with high accuracy based classification model is proposed.

**Keywords:** Autistic Spectrum Disorder, Chi-Square (CS), Classification, Feature selection technique (FST), Naive Bayes (NB)

## REFERENCES

- [1]. Akyol, K., Gultepe, Y., & Karaci, A. (2018). "A Study on Autistic Spectrum Disorder for Children Based on Feature Selection and Fuzzy". International Congress on Engieneering and Life Science, pp. 804–807.
- [2]. Diabat, M. Al, & Al-shanableh, N. (2019). "E NSEMBLE L EARNING M ODEL FOR S CREENING". International Journal of Computer Science & Information Technology (IJCSIT), vol.1, no. 2, pp.13–14. https://doi.org/10.5121/ijcsit.2019.11205
- [3]. Holmes, G., Donkin, A., & Witten, I. H. (n.d.). "WEKA: a machine learning workbench. Proceedings of ANZIIS". '94 - Australian New Zealnd Intelligent Information Systems Conference, pp. 357–361. https://doi.org/10.1109/ANZIIS.1994.396988
- [4]. Shrivas, A. K., Sahu, S. K., & Hota, H. S. (2018). "Classification of Chronic Kidney Disease with Proposed Union Based Feature Selection Technique". SSRN, vol. 5, pp. 649–653. https://doi.org/10.2139/ssrn.3168581
- [5]. Thabtah, F., & Peebles, D. (2020). "A new machine learning model based on induction of rules for autism detection". Health Informatics Journal, vol. 26, pp. 1, 265–286. https://doi.org/10.1177/1460458218824711
- [6]. Vaishali, R., & Sasikala, R. (2017). "A machine learning based approach to classify Autism with optimum behaviour sets". International Journal of Engineering & Technology, vol. 5, pp. 1–6.
- [7]. Verma, P., Awasthi, V. K., & Sahu, S. K. (2021). "An Ensemble Model With Genetic Algorithm for Classification of Coronary Artery Disease." International Journal of Computer Vision and Image Processing, vol.11, no. 3, pp.70– 83. https://doi.org/10.4018/ijcvip.2021070105
- [8]. Wang, H., Li, L., Chi, L., & Zhao, Z. (2019). "Autism Screening Using Deep Embedding Representation". In Lecture Notes in Computer Science. Springer, Cham.