

DETEKSI GANGGUAN AUTIS PADA ANAK MENGGUNAKAN METODE *MODIFIED K-NEAREST NEIGHBOR*

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ABSTRAK

Autism Spectrume Disorder merupakan gangguan perkembangan dimana seorang anak memperlihatkan suatu perilaku menjauhkan diri dari lingkungan sosialnya, seakan – akan hidup di dunianya sendiri. Jenis gangguan *Autistic Disorder* merupakan ketidakmampuan untuk memahami permasalahan dari sudut pandang orang lain dan tidak mampu menafsirkan emosi. Mengetahui anak menderita autisme sejak dini sangatlah penting, karena semakin dini autisme diobati maka semakin besar peluang untuk sembuh. Dengan memanfaatkan perkembangan teknologi, pendeteksian gejala autisme dapat dilakukan lebih awal menggunakan sistem deteksi autis berbasis web. Metode *Modified K-Nearest Neighbor* merupakan pengembangan dari metode konvensional *K-Nearest Neighbor*. Tujuan dari penelitian ini untuk mencari K optimal dan mengukur tingkat akurasi, presisi dan recall pada metode *Modified K-Nearest Neighbor*. Deteksi Autis pada Anak menggunakan metode *Modified K-Nearest Neighbor* dengan data yang digunakan diambil dari *website UCI Machine Learning Repository*, dengan jumlah data 292 data dan 2 class output. Pengujian dilakukan dengan mencari kedekatan dari setiap data *training* untuk menentukan nilai validitas, setelah itu mencari kedekatan dari data *training* dan data *testing* untuk menghitung *weight voting*, setelah mendapatkan hasil dari *weight voting* akan dicari mayoritas datanya. Berdasarkan Hasil pengujian yang telah dilakukan didapatkan hasil akurasi tertinggi sebesar 96,67%, hasil presisi tertinggi sebesar 97,33%, dan hasil recall tertinggi sebesar 100% pada K = 13. Untuk K optimal dari pengujian ini ditunjukkan pada K = 3.

Kata Kunci : Deteksi Autisme, Klasifikasi, Metode *Modified K-Nearest Neighbor*.

DETECTION OF AUTISM DISORDERS IN CHILDREN USING MODIFIED K-NEAREST NEIGHBOR METHOD

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ABSTRACT

Autism Spectrume Disorder is a development disturbance in which a child shows a behavior of distancing himself from his social environment, as though living in his own world. This type of Autistic Disorder is a disorder in which a child is unable to understand problems from another person's point of view and is unable to interpret emotions. Knowing that a child has autism from an early age is very important, because the earlier autism is treated, the better the chance for recovery. By taking advantage of technological developments, the detection of autism symptoms can be done earlier using a web-based autism detection system. Modified K-Nearest Neighbor method is a development of the conventional K-Nearest Neighbor method. The purpose of this study is to find optimal K and measure the level of accuracy, precision and recall in the Modified K-Nearest Neighbor method. Autism detection in children uses the Modified K-Nearest Neighbor method with the data used taken from the UCI Machine Learning Repository website, with a total of 292 data and 2 output classes. Testing is done by looking for the closeness of each training data to determine the validity value, after that look for the closeness of training data and testing data to calculate weight voting, after getting the results of weight voting the majority of the data will be searched. Based on the results of the test which have been done, it was found out that the highest accuracy results were 96.67%, highest precision results were 97,33% and highest recall results were 100% at K = 13. For the optimal k of this test was shown at K = 3.

Keywords: *Autism Detection, Classification, Modified K-Nearest Neighbor Method.*