IMPLEMENTATION OF PARTICLE SWARM OPTIMIZATION IN K-NEAREST NEIGHBOR ALGORITHM AS OPTIMIZATION HEPATITIS C CLASSIFICATION

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Abstract	Hepatitis has become a public health problem that is generally caused by infection with the hepatitis virus. One type of hepatitis caused by a virus is Hepatitis C. This disease can cause patients to experience inflammation of the liver. In the worst conditions, it can even lead to death. Initial predictions need to be made to increase the awareness of each individual against the threat of Hepatitis C by using the K-Nearest Neighbor method. K-Nearest Neighbor is a classification method that can give a pretty good percentage result in classifying, especially when using large training data. However, K-Nearest Neighbor still has a weakness, namely the determination of the value of K that is less precise so that it can reduce classification performance. To overcome these shortcomings, the researchers used the implementation of Particle Swarm Optimization on K-Nearest Neighbor to find the optimal K value. The existence of this implementation is expected to be able to increase the value of accuracy in classification and overcome solutions to weaknesses in the K-Nearest Neighbor algorithm. From the results of the K-Nearest Neighbor test, the accuracy value is 97.24% at K=5 and K=3. As for the results of testing the implementation of Particle Swarm Optimization on the K-Nearest Neighbor, there was an increase in the accuracy value of 2.07% to 99.31%. This test shows that the implementation of PSO can overcome the shortcomings of KNN and this model can be used as the best solution to determine the classification of Hepatitis C disease.
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