

## **Abstract**

**One of the factors causing the congestion of queues at the intersection of Jalan Tegar Beriman - Sukahati, Bogor District is the traffic light regulation factor. The duration of the traffic lights has been regulated but it is still not efficient to deal with the problem of vehicle density, especially at certain times. The effect of the inefficient duration change has a chain effect on the duration of the lamp at the other intersection sections. ANN is the method used in this research and can be used in the optimization case. The duration optimization process is carried out by classifying the queue density of vehicles at road intersections. The comparison of density classes will be seen from the average queue length of each road section at the intersection. Factors used as parameters other than the duration of the red and green lights for each road segment are the time and environmental conditions of each road segment. The use of ANN is expected to produce good duration optimization so that vehicle density does not accumulate on one road segment, but can reduce the density on each road section because of the balanced density at each intersection.**

**Keywords: Artificial Neural Network (ANN), Classification, Intersection, Optimization, Traffic Light**