


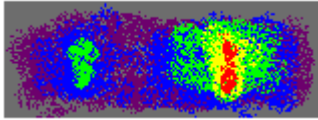
## Detecting Anomalous Traffic using Temporal Pattern Recognition

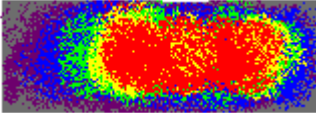
The main goal is to be able to determine when anomalous traffic is occurring or is about to occur. Network traffic can be recorded as time goes as below on the chart.



I think it would be possible using past data from regular traffic, anomalous traffic, and a genetic algorithm to develop an analog machine that could accomplish our goal of predicting anomalous traffic.

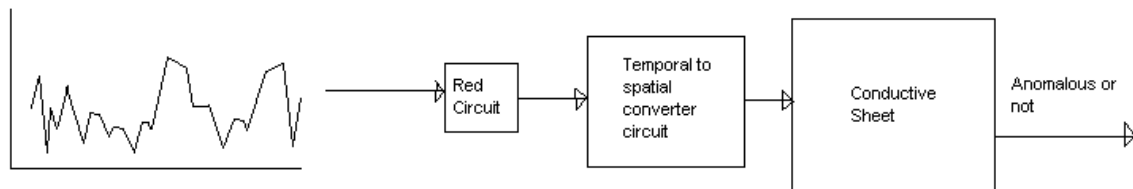
To start we are going to be making an analog circuit that takes a traffic pattern as input so we need to transform the temporal pattern into a spatial one. For example a temporal

pattern such as:  can be converted to:  on a conductive sheet. Of course, the more contacts that are on the sheet, the more detailed patterns can be used as input. Let us say that the above pattern is not anomalous. An

example of an anomalous input may be like the following: .

The next step is to use a genetic algorithm to be able to distinguish between the two types of patterns, normal and anomalous traffic. This is easier said than done, but oh well.

Now the whole machine looks like this:



The End.