# Test Case 5:

we have mentioned that when we have started testing with four video sets (circle, rectangle, pentagon, and triangle) we faced some issues with pentagon video set. We have done detailed analysis about these problems and included our findings in **TestReport4(Run2New).** However, we have solved the problem regarding the pentagon video set by reducing the frame gap duration from 0.4s to 0.2s while creating the video. For this reason, we have got significantly better results with our experiments. In **TestReport4(Run2New)** we have mentioned that we tried 12 configurations and all of them failed. Some of them passed through the newborn cycles but stuck in the pentagon frames prediction state. By keeping maxCycles, frameHeight, frameWidth and GetPredictedInputValues (3 for all cases) unchanged, we have manipulated ColumnDimensions and CellsPerColumn parameters in the htmConfig.json. We have trained the model with our newly created pentagon video set and other three video sets (circle, rectangle and triangle).

1. We have got the following results (training accuracy) when the ColumnDimensions = **2048** and CellsPerColumn = **40**. [We have used significantly larger video sets. That’s, why we have started from higher column dimensions]. Total Runtime: **8 hrs 14 minutes**.
2. Video Set of Label: **Circle reaches accuracy: 100%**

Saturated Accuracy reached after**: 10 cycles** stable pattern reached

1. Video Set of Label: **Pentagon reaches accuracy: 77.272723%**

Saturated Accuracy reached after**: 56 cycles** stable pattern reached

1. Video Set of Label: **Rectangle reaches accuracy: 100%**

Saturated Accuracy reached after**: 751 cycles** stable pattern reached

1. Video Set of Label: **Triangle reaches accuracy: 100%**

Saturated Accuracy reached after**: 110 cycles** stable pattern reached

**Average Accuracy: 94.31818075%**

1. We have got the following results (training accuracy) when the ColumnDimensions = **2048** and CellsPerColumn = **80**. Total Runtime: **9 hrs 47 minutes.**
2. Video Set of Label: **Circle reaches accuracy: 100%**

Saturated Accuracy reached after**: 9 cycles** stable pattern reached

1. Video Set of Label: **Pentagon reaches accuracy: 72.72727%**

Saturated Accuracy reached after**: 188 cycles** stable pattern reached

1. Video Set of Label: **Rectangle reaches accuracy: 80 %**

Saturated Accuracy reached after**: 970 cycles** stable pattern reached

1. Video Set of Label: **Triangle reaches accuracy: 100%**

Saturated Accuracy reached after**: 11 cycles** stable pattern reached

**Average Accuracy: 88.1818175%**

1. We have got the following results (training accuracy) when the ColumnDimensions = **2048** and CellsPerColumn = **160**. Total Runtime: **11 hrs 38 minutes.**
2. Video Set of Label: **Circle reaches accuracy: 100%**

Saturated Accuracy reached after**: 8 cycles** stable pattern reached

1. Video Set of Label: **Pentagon reaches accuracy: 77.27273%**

Saturated Accuracy reached after**: 119 cycles** stable pattern reached

1. Video Set of Label: **Rectangle reaches accuracy: 91.42857%**

Saturated Accuracy reached after**: 921 cycles** stable pattern reached

1. Video Set of Label: **Triangle reaches accuracy: 100%**

Saturated Accuracy reached after**: 10 cycles** stable pattern reached

**Average Accuracy: 92.175325%**

1. We have got the following results (training accuracy) when the ColumnDimensions = **4096** and CellsPerColumn = **80**. Total Runtime: **24 hrs. (forcefully stopped).** The Model did not pass through the newborn cycle state with this configuration.
2. We have got the following results (training accuracy) when the ColumnDimensions = **4096** and CellsPerColumn = **160**. Total Runtime: **32 hrs. (forcefully stopped).** The Model did not pass through the newborn cycle state with this configuration.

So, we have Analysed that for four video sets we got the optimum average training set accuracy when the ColumnDimensions = **2048** and CellsPerColumn = **40.**