

DSD Auto Training

dsd_trainer.py is stealing my job.

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Goal

From a **raw trace** containing normal and recurrent activities, extract the **DSD training data** and **occurrences rules** for the activities in the trace.

Overview

Raw Trace



Protos



Rules

Overview

Raw Trace



Detect States List

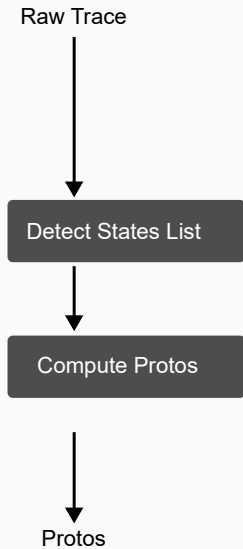


Protos

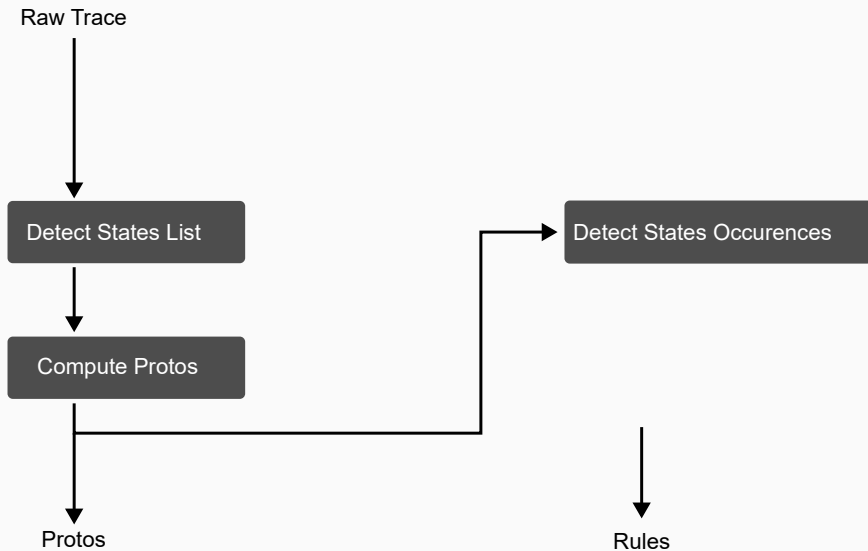


Rules

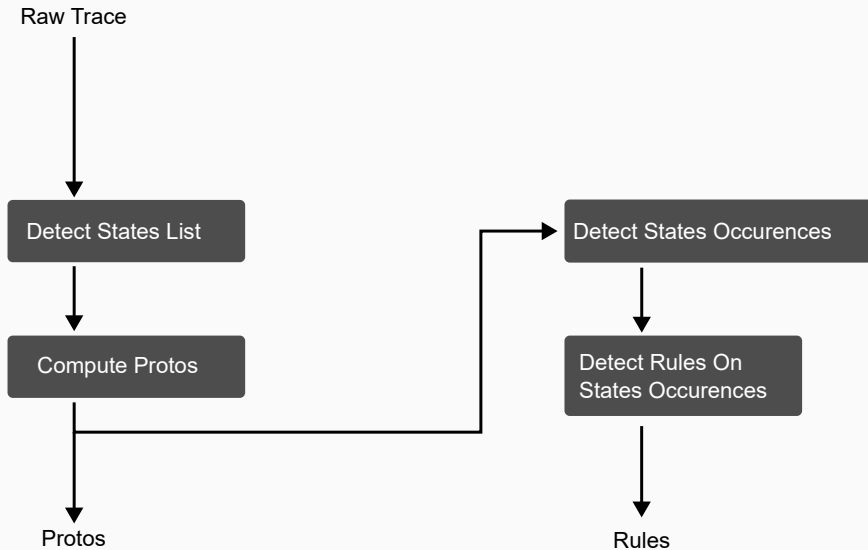
Overview



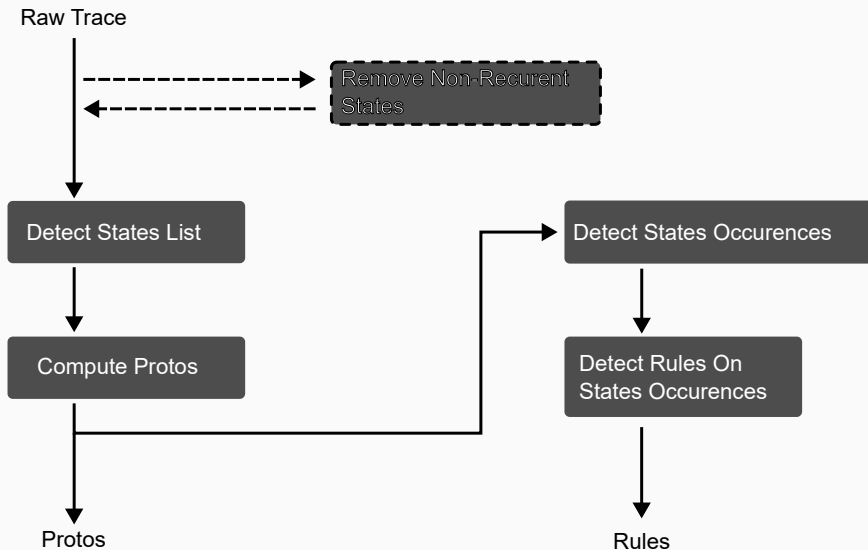
Overview



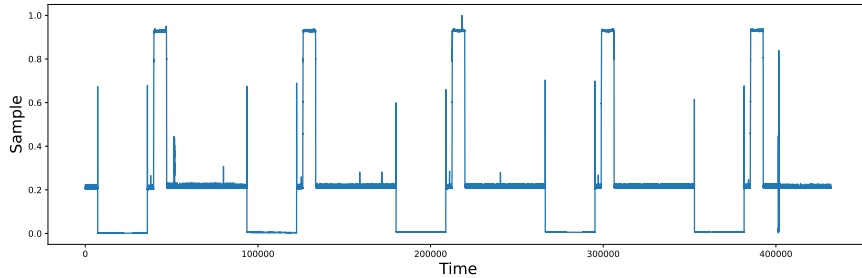
Overview



Overview



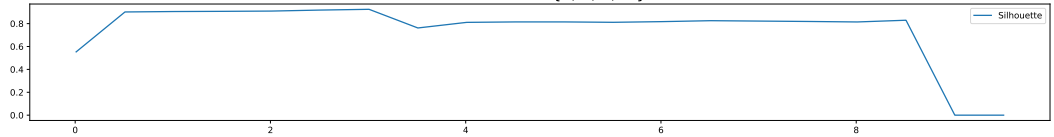
Raw Trace



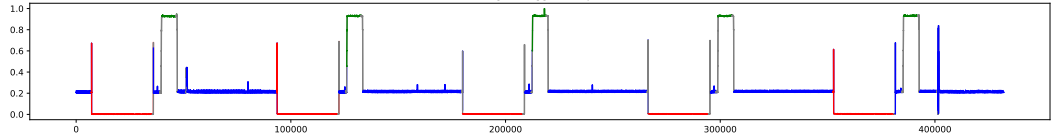
Detect States List and Compute Protos

- Extracts subsequences from trace (sliding windows).
- Apply density-based clustering (DBSCAN) with optimal threshold search (silhouette score).
- Get clusters and outliers.
- For every cluster, compute the centroid as proto for DSD.

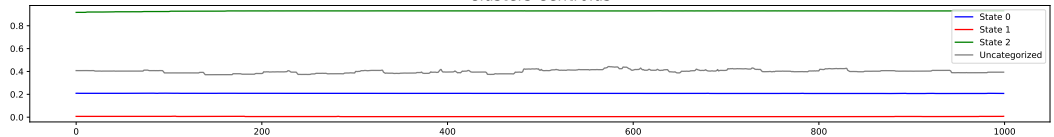
Suggested EPS: 3.01 Based on Max Silhouette Score
Yield 4 clusters {0, 1, 2, -1}.



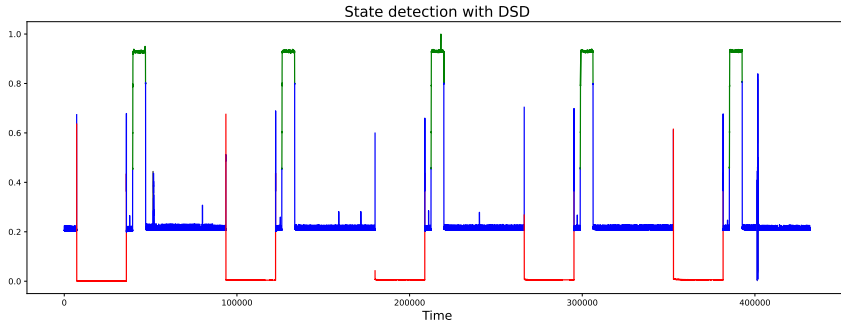
Clustering for suggested eps=3.01



Clusters Centroids

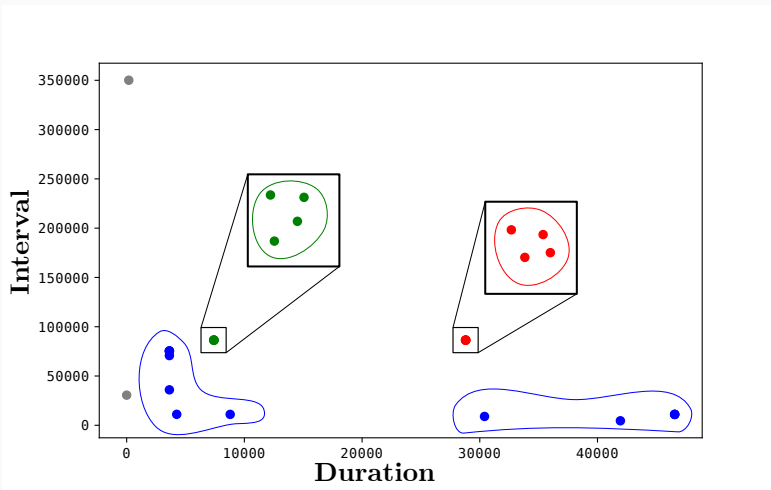


State Detection



Extract Rules Occurences

DIY-PoC-QaD solution: Occurences $\longrightarrow$ (Interval,Duration)



Hyper-Parameters

- Windows size and stride: w, s .
- DSD coefficient α .
- Rules Detection Parameters.