Data Dictionary

Below is the data dictionary for the provided dataset:

Column Name	Data Type	Description
Dst Port	int32	Destination port number
Protocol	int32	Network protocol (e.g., TCP, UDP)
Flow Duration	int32	Duration of the flow
Total Fwd Packet	int32	Total packets in the forward direction
Total Bwd packets	int32	Total packets in the backward direction
Total Length of Fwd Packet	float32	Total length of forward packets
Total Length of Bwd Packet	float32	Total length of backward packets
Fwd Packet Length Max	float32	Maximum length of forward packets
Fwd Packet Length Min	float32	Minimum length of forward packets
Fwd Packet Length Mean	float32	Mean length of forward packets
Fwd Packet Length Std	float32	Standard deviation of forward packet length
Bwd Packet Length Max	float32	Maximum length of backward packets
Bwd Packet Length Min	float32	Minimum length of backward packets
Bwd Packet Length Mean	float32	Mean length of backward packets
Bwd Packet Length Std	float32	Standard deviation of backward packet length
Flow Bytes/s	float32	Flow bytes per second
Flow Packets/s	float32	Flow packets per second
Flow IAT Mean	float32	Mean inter-arrival time of flows
Flow IAT Std	float32	Standard deviation of inter-arrival time of flows
Flow IAT Max	float32	Maximum inter-arrival time of flows
Flow IAT Min	float32	Minimum inter-arrival time of flows
Fwd IAT Total	float32	Total inter-arrival time of forward packets
Fwd IAT Mean	float32	Mean inter-arrival time of forward packets
Fwd IAT Std	float32	Standard deviation of inter-arrival time of forwards
Fwd IAT Max	float32	Maximum inter-arrival time of forward packets

Column Name	Data Type	Description
Fwd IAT Min	float32	Minimum inter-arrival time of forward packets
Bwd IAT Total	float32	Total inter-arrival time of backward packets
Bwd IAT Mean	float32	Mean inter-arrival time of backward packets
Bwd IAT Std	float32	Standard deviation of inter-arrival time of backward
Bwd IAT Max	float32	Maximum inter-arrival time of backward packets
Bwd IAT Min	float32	Minimum inter-arrival time of backward packets
Fwd PSH Flags	int32	Forward packets with PSH (Push) flag
Bwd PSH Flags	int32	Backward packets with PSH (Push) flag
Fwd RST Flags	int32	Forward packets with RST (Reset) flag
Bwd RST Flags	int32	Backward packets with RST (Reset) flag
Fwd Header Length	int32	Length of the forward header
Bwd Header Length	int32	Length of the backward header
Fwd Packets/s	float32	Forward packets per second
Bwd Packets/s	float32	Backward packets per second
Packet Length Min	float32	Minimum length of packets
Packet Length Max	float32	Maximum length of packets
Packet Length Mean	float32	Mean length of packets
Packet Length Std	float32	Standard deviation of packet length
Packet Length Variance	float32	Variance of packet length
FIN Flag Count	int32	Count of packets with FIN (Finish) flag
SYN Flag Count	int32	Count of packets with SYN (Synchronize) flag
RST Flag Count	int32	Count of packets with RST (Reset) flag
PSH Flag Count	int32	Count of packets with PSH (Push) flag
ACK Flag Count	int32	Count of packets with ACK (Acknowledgment) flag
CWR Flag Count	int32	Count of packets with CWR (Congestion Window Reduce)
ECE Flag Count	int32	Count of packets with ECE (Explicit Congestion) flag
Down/Up Ratio	float32	Downstream/Upstream ratio of traffic
Average Packet Size	float32	Average size of packets
Fwd Segment Size Avg	float32	Average size of forward segments
Bwd Segment Size Avg	float32	Average size of backward segments

Column Name	Data Type	Description
Fwd Bytes/Bulk Avg	int32	Average bytes per bulk of forward packets
Fwd Packet/Bulk Avg	int32	Average packets per bulk of forward packets
Fwd Bulk Rate Avg	int32	Average forward bulk rate
Bwd Bytes/Bulk Avg	int32	Average bytes per bulk of backward packets
Bwd Packet/Bulk Avg	int32	Average packets per bulk of backward packets
Bwd Bulk Rate Avg	int32	Average backward bulk rate
Subflow Fwd Packets	int32	Number of packets in the forward subflow
Subflow Fwd Bytes	int32	Number of bytes in the forward subflow
Subflow Bwd Packets	int32	Number of packets in the backward subflow
Subflow Bwd Bytes	int32	Number of bytes in the backward subflow
FWD Init Win Bytes	int32	Initial window size in bytes for the forward flow
Bwd Init Win Bytes	int32	Initial window size in bytes for the backward flow
Fwd Act Data Pkts	int32	Number of active data packets in the forward flow
Fwd Seg Size Min	int32	Minimum segment size observed in the forward flow
Active Mean	float32	Mean time of active connections
Active Std	float32	Standard deviation of time of active connections
Active Max	float32	Maximum time of active connections
Active Min	float32	Minimum time of active connections
Idle Mean	float32	Mean time of idle connections
Idle Std	float32	Standard deviation of time of idle connections
Idle Max	float32	Maximum time of idle connections
Idle Min	float32	Minimum time of idle connections
Total TCP Flow Time	int64	Total time duration of TCP flows
Label	**object**	**The class label of the flow (e.g., normal, malicious)**