Table 1 Description of Intrusion Detection in Smart Homes (IDSH) Dataset

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| **ID** | **Feature** | **Type** | **Description** |
| 1 | timestamp | Time | Timestamp of connection |
| 2 | source\_ip | String | Source IP address |
| 3 | source\_port | Number | Source Port which Originate endpoint’s TCP/UDP ports |
| 4 | destination\_ip | String | Destination IP address |
| 5 | dst\_port | Number | Destination ports which respond to endpoint’s TCP/UDP ports |
| 6 | protocol | String | Transport layer protocols of flow connections |
| 7 | Family | String | Address Family |
| 8 | Service | String | Dynamically detected protocols, such as DNS, HTTP and SSL |
| 9 | Duration | Time | The difference of the time between the packet sent from the source and received the response from the cloud server. |
| 10 | source\_bytes | Number | Source bytes which originate from the source. |
| 11 | destination\_bytes | Number | Destination bytes which are responded from the destination. |
| 12 | conn\_state | String | Various connection states, such as S0 (connection without replay), S1 (connection established), and REJ (connection attempt rejected). |
| 13 | missed\_bytes | Number | Number of missing bytes in content gaps. |
| 14 | source\_packets | Number | Number of original packets which is estimated from source systems. |
| 15 | src\_ip\_bytes | Number | Number of original IP bytes which is the total length of IP header field of source systems. |
| 16 | destination\_packets | Number | Number of destination packets which is estimated from destination systems. |
| 17 | dst\_ip\_bytes | Number | Number of destination IP bytes which is the total length of IP header field of destination systems. |
| 18 | Temperature | String | Room Temperature (oC) of the Zone. |
| 19 | Humidity | String | Humidity (%) of the Zone. |
| 20 | Status | String | Status of Air Conditioner (ON/OFF). |
| 21 | Label | Number | Tag Normal traffic as 0 and Attack as 1. |
| 22 | Type | String | Tag attack categories as Normal, DoS and MITM |