Outliers

Noises

Anomalies

Attacks

Fault detection

Anomaly detection

Intrusion detection

Outliers

Anomalies

Attacks

Noises

Anomaly Detection

Fault Detection

Intrusion Detection

Visual Recognition

Is the Model Optimal?

Import KDD’99 Dataset

Begin

End

Statistical Recognition

Data Preparation for the Model

Data Cleaning

Data Normalization

Training of ANN Model

Data Partitioning

Training Set

Testing Set

No

Yes

Testing of ANN Model

Expected Results?

No

Model Evaluation

Yes

Import Intrusion Detection Dataset

Data Normalization

Data Normalization

Data Preprocessing

Data Preprocessing

Data Normalization

Feature Extraction

Model Construction

Signal Detection

Normal

Abnormal

Data Partitioning