| VAE | | | | |
| --- | --- | --- | --- | --- |
| Scenario | | 1 | 2 | 3 |
| Data type | | Original data | Augmented data  (Imbalanced classification) | Augmented data  (Balanced classification) |
| Learning dataset | # of data points | 60 | 2500 | 2500 |
| Visualization | A graph of a number of blue and white bars  Description automatically generated |  | A graph with a red line  Description automatically generated |
| Anomaly threshold | 0.21961 | 0.03923 | 0.11208 |
| # of anomalies | 3 | 125 | 125 |
| Precision | 1 | 1 | 1 |
| Recall | 0.667 | 0.992 | 0.992 |
| F1-score | 0.8 | 0.996 | 0.996 |
| Validation dataset | # of data points | 5 | 200 | 200 |
| Visualization |  |  |  |
| Anomaly threshold | 0.01707 | 0.03388 | 0.04286 |
| # of anomalies | 1 | 10 | 10 |
| Precision | 0 | 1 | 0.9 |
| Recall | 0 | 0.9 | 0.9 |
| F1-score | 0 | 0.9474 | 0.9 |
| test dataset | # of data points | 12 | 500 | 500 |
| Visualization |  |  | A graph with a red line  Description automatically generated |
| Anomaly threshold | 0.21312 | 0.04683 | 0.05835 |
| # of anomalies | 1 | 25 | 25 |
| Precision | 0 | 1 | 1 |
| Recall | 0 | 0.96 | 0.96 |
| F1-score | 0 | 0.9796 | 0.9796 |

| Diffusion | | | | |
| --- | --- | --- | --- | --- |
| Scenario | | 1 | 2 | 3 |
| Data type | | Original data | Augmented data  (Imbalanced classification) | Augmented data  (Balanced classification) |
| Learning dataset | # of data points | 60 | 2500 | 2500 |
| Visualization |  |  |  |
| Anomaly threshold | 0.0233 | 0.00206 | 0.00216 |
| # of anomalies | 3 | 125 | 125 |
| Precision | 1 | 1 | 1 |
| Recall | 0.667 | 0.992 | 0.992 |
| F1-score | 0.8 | 0.996 | 0.996 |
| Validation dataset points | # of data points | 5 |  |  |
| Visualization |  |  |  |
| Anomaly threshold | 0.01817 |  |  |
| # of anomalies | 1 |  |  |
| Precision | 0 |  |  |
| Recall | 0 |  |  |
| F1-score | 0 |  |  |
| test dataset | # of data points | 12 |  |  |
| Visualization |  |  |  |
| Anomaly threshold | 0.05583 |  |  |
| # of anomalies | 1 |  |  |
| Precision | 0 |  |  |
| Recall | 0 |  |  |
| F1-score | 0 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Transformers | | | |
| Scenario | 1 | 2 | 3 |
| Data type | Original data | Augmented data  (Imbalanced classification) | Augmented data  (Balanced classification) |
| Data number | 60 | 2500 | 2500 |
| Visualization |  |  |  |
| Anomaly threshold |  |  |  |
| Number of anomalies |  |  |  |
| Precision |  |  |  |
| Recall |  |  |  |
| F1-score |  |  |  |