

- Training phase
- Pretrained network

Inference phase

Mahalanobis distance calculation $M(\mathbf{x}_i) = \sqrt{(\mathbf{x}_i - \widehat{\mu})^T \widehat{\Sigma}^{-1} (\mathbf{x}_i - \widehat{\mu})}$ $X = \{x_1, x_2, ..., x_{|X|}\}, x_i \in \mathbb{R}^D$ $\hat{\Sigma} = (1 - \rho)\hat{\Sigma} + \rho \frac{tr(\hat{\Sigma})}{D}I_{D}$ $\hat{\lambda} = \frac{\sum_{X \in \mathbb{Z}}|X|}{|x|}$

Parameters estimation

Rank $M(\cdot)$ &

pick top k% points.

E(X) calculation

Energy RFS likelihood

Defect detected?

(Y/N or [0,1])