CYBERATTACK

CYBER-PHYSICAL SYSTEM

L1 A3 F5 L4 L2 F3

SENSOR READINGS

DENSE VIEW CAUSAL GRAPH - ATTACK

L4 F5 A3 L1 F3 L2

DOMAIN KNOWLEDGE

SPARSE VIEW CAUSAL GRAPH - ATTACK

L4 A3 L1 F3

FUSED WEIGHTED LAPLACIAN REPRESENTATION - ATTACK

CYBER-PHYSICAL SYSTEM

L1 A3 F5 L4 L2 F3

SENSOR READINGS

DENSE VIEW CAUSAL GRAPH - NORMAL

L4 F5 A3 L1 F3 L2

LAPLACIAN REPRESENTATION - NORMAL

GRAPH CONVOLUTIONAL NEURAL NETWORK

Input layer

Hidden Layers

Output layer

$Z = 1/(1 + e^{-x})$

SIGMOID

SYSTEM STATUS

P1 - MULTI-VIEW CAUSAL GRAPH FUSION

P2 - CAUSAL GRAPH CLASSIFICATION WITH DGCNN