

Table 10. The Hyperparameters of DeMuVGN

Hyperparameters	Value	Range of values
hidden size	64	{32,64,128}
graph hops	2	[1,4,1]
lr	0.001	{0.0001,0.001, 0.01, 0.05}
max epochs	800	{100,300,500,800,900,1000}
batch size	16	{8,16,32}
sampling ratio of the minority class	2	{0.5,1,2,3}
hidden layers	2	[1,4,1]

Table 11. The Hyperparameters of baselines

Baselines	Hyperparameters	Range of values
LR	C	{0.001, 0.01, 0.1, 1, 10, 100}
	solver	{'newton-cg', 'lbfgs', 'liblinear', 'sag', 'saga'}
	penalty	{'l1', 'l2'}
NB	alpha	{0.1,0.5,1.0.10}
RF	n estimators	{50, 100, 200, 500, 600}
	max depth	{3, 5, 10, 15}
SVM	C	{0.1, 1, 10, 100}
	kernel	{'linear', 'poly', 'rbf', 'sigmoid'}
XGBoost	max_depth	{3, 4, 5, 6, 7, 8}
	n_estimators	{50, 100, 200}
DP-CNN	lr	{0.0001,0.001, 0.01, 0.05}
DBN	time cost	{5,10,15,20}
	lr	{0.0001,0.001, 0.01, 0.05}
MNB	alpha	{0.1,0.5,1.0.10}
TCBoost	n estimators	{50, 100, 200, 500, 600}
VCB-SVM	n estimators	{50, 100, 200, 500, 600}