D-ACES Framework Proposal and Analysis

Comparison with State-of-the-Art IFS Methods (Syn A)

Table 6.1: Comparison of Various IFS Methods: Best Results on Synthetic Dataset A

Methods	Mean(%)	Synethetic Datasets												
		A	1 .1	A.2		A.3		A.4		A.5		A.6		
D-ACES	TPR	100		100		89.6		96.7		83.1		73.2		
	FDR	0		0		0		13.5		18.9		7.5		
INVASE	TPR	100	\$	100	\$	100	▲10.4	100	▲3.3	72.7	v 10.4	72.0	▼ 1.2	
	FDR	0	♦	0	♦	0	\Diamond	39.3	$\blacktriangle25.8$	23.3	$\blacktriangle 4.4$	4.6	▼ 2.9	
L2X	TPR	100	\$	99.8	v 0.2	80.5	▼ 9.6	82.7	v 14	75.9	▼ 7.2	78.3	▲ 5.1	
	FDR	0	\$	0.3	▲ 0.3	19.5	▲ 19.5	20.2	▲ 6.7	26.5	▲ 7.6	21.8	▲ 14.3	
LIME	TPR	39.0	▼ 61	100	♦	100	▲ 10.4	40.8	▼ 55.9	57.1	v 26	55.9	▼ 17.3	
	FDR	61.0	▲ 61	0	♦	0.1	▲ 0.1	49.4	▲35.9	37.0	▲ 18.1	44.1	▲36.6	
SHAP	TPR	60.6	$ extstyle{7}39.4$	88.0	v 12	94.0	▲ 4.4	64.5	32.2	66.9	$\checkmark 16.2$	65.2	▼ 8	
	FDR	39.4	▲39.4	12.0	▲ 12	6.0	▲ 6	34.0	▲ 20.5	32.8	▲ 13.9	34.8	▲ 27.3	

Same explanations across instances

- Nerual network based IFS (realtime): Better
- **♦**Syn A.1 A.3

◆Syn A.1

- LIME & SHAP: Unstable performance
- INVASE: Best

D-ACES Framework Proposal and Analysis

Comparison with State-of-the-Art IFS Methods (Syn A)

Same explanations across instances

Table 6.1: Comparison of Various IFS Methods: Best Results on Synthetic Dataset A Syn A.1

Methods Mean(%) —			Synethetic Datasets											Mound potundly board IEC (4001				
	Wican(70)	A	1.1	A	2	1	A.3	1	A .4	I	A .5	A.6		Nerual network based IFS (real-				
D-ACES	TPR	1	00	10	00	8	89.6	9	6.7	8	3.1	73.2		time): Better				
D-ACES	FDR		0	(0		0	1	3.5	1	8.9	7.5						
INVASE	TPR	100	\$	100	♦	100	▲10.4	100	▲3.3	72.7	▼10.4	72.0	♦ 1Sy	n A.1 - A.3				
INVASE	FDR	0	♦	0	♦	0	♦	39.3	▲ 25.8	23.3	$\blacktriangle 4.4$	4.6	▼ 2.9					
L2X	TPR	100	\$	99.8	▼0.2	80.5	₹9.6	82.7	v 14	75.9	▼ 7.2	78.3	▲ 5. 1	LIME & SHAP: Unstable				
<i>D2A</i>	FDR	0	♦	0.3	▲0.3	19.5	▲ 19.5	20.2	▲ 6.7	26.5	▲ 7.6	21.8	▲ 14.3	performance				
LIME	TPR	39.0	▼ 61	100	\Diamond	100	▲ 10.4	40.8	▼ 55.9	57.1	▼ 26	55.9	▼ 17.3	periormanee				
	FDR	61.0	▲ 61	0	♦	0.1	▲ 0.1	49.4	▲35.9	37.0	▲18.1	44.1	▲36.6	INVASE: Best				
SHAP	TPR	60.6	39.4	88.0	v 12	94.0	▲ 4.4	64.5	▼ 32.2	66.9	$\checkmark 16.2$	65.2	▼ 8	II VI VI LOLI. Dest				
	FDR	39.4	▲39.4	12.0	▲ 12	6.0	▲ 6	34.0	▲ 20.5	32.8	▲13.9	34.8	▲ 27.3	_				

D-ACES Framework Proposal and Analysis

Application to Syn B

Table 6.2: Application Results of *D-ACES* on Synthetic Dataset B

Metrics(%)	Synethetic Datasets											
	B.1	B.2	B.3	B.4	B.5	B.6						
Mean TPR	100	100	98.0	100	69.9	71.3						
Mean FDR	0	0.2	0	42.9	13.2	27.9						
λ^*	2	2.5	1.5	2.5	2.2	3						