

Training Accuracy

	No. of folds	1	2	3	4	5
Binary	CNN	88.49	88.56	88.58	87.60	87.91
	LSTM	85.62	85.64	85.70	85.86	85.80
	CNN-LSTM	90.62	90.73	91.32	90.77	91.18
Multiclass	CNN	65.20	65.54	64.33	64.46	64.27
	LSTM	59.65	59.85	61.05	61.47	61.92
	CNN-LSTM	75.24	76.76	77.15	77.54	76.99

Validation Accuracy

	No. of folds	1	2	3	4	5
Binary	CNN	88.97	88.34	89.16	87.58	86.87
	LSTM	85.81	86.30	86.28	85.50	85.72
	CNN-LSTM	90.77	90.38	90.94	90.64	90.97
Multiclass	CNN	64.25	66.45	66.02	65.61	66.04
	LSTM	60.03	60.19	61.47	61.79	63.51
	CNN-LSTM	74.78	75.65	76.33	76.35	76.37

Binary Classification Early Fusion using First Derivative Using CNN+LSTM Architecture -

- Training Accuracy = 89.24%
- Validation Accuracy = 75.67%

Binary Classification Early Fusion using First and Second Derivative Using CNN-LSTM Architecture -

- Training Accuracy = 91.04%
- Validation Accuracy = 78.58%

Binary Classification Late Fusion using First Derivative Using CNN-LSTM Architecture -

- Training Accuracy = 88.07%
- Validation Accuracy = 75.63%

Multiclass Classification Early Fusion using First Derivative Using CNN-LSTM Architecture-

- Training Accuracy - 74.96%
- Validation Accuracy - 70.08%
- Classification Report -

	Precision	Recall	F1- Score	Support
Analysis	0.11	0.00	0.00	677
Backdoor	1.00	0.01	0.01	583
DoS	0.61	0.02	0.04	4089
Exploits	0.44	0.82	0.58	11132
Fuzzers	0.25	0.51	0.33	6062
Generic	1.00	0.96	0.98	18871
Normal	0.92	0.67	0.77	37000
Reconn	0.67	0.71	0.69	3496
Shellcode	0.22	0.12	0.16	378
Worms	0.00	0.00	0.00	44

- Confusion Matrix -

	Predicted										
Actual		0	1	2	3	4	5	6	7	8	9
	0	1	0	0	658	2	0	16	0	0	0
	1	0	4	0	544	18	0	15	2	0	0
	2	0	0	75	3460	308	6	215	22	3	0
	3	0	0	17	9114	906	0	1019	63	13	0
	4	0	0	4	1914	3104	0	753	256	31	0
	5	0	0	12	403	149	18146	148	10	3	0
	6	8	0	6	3574	7714	1	24735	851	111	0
	7	0	0	6	726	253	4	34	2473	0	0
	8	0	0	2	91	187	6	20	26	46	0
	9	0	0	0	34	4	0	6	0	0	0