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Research article

A novel approach for enhanced abnormal action recognition via coarse and precise detection stage

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Supplementary

Table S1. Recognition rate of different spatial weights.

Spatial Weights (λ)	ViT	ViT + SimAM	ViT (Joint Loss)	ViT (Joint Loss) + SimAM
0.0	83.37	84.97	84.21	85.33
0.1	87.17	88.09	87.23	88.65
0.2	90	90.57	89.64	91.34
0.3	91.93	92.21	92.33	93.51
0.4	93.47	93.17	93.88	94.54
0.5	94.23	94.41	94.76	95.24
0.6	**94.59**	**94.75**	**95.1**	**95.63**
0.7	93.96	94.53	94.12	94.66
0.8	92.91	93.51	92.75	93.49
0.9	90.28	91.5	91.03	91.94
1.0	87.25	88.58	88.79	89.67

Table S1 shows the accuracy after fusing RGB and optical flow streams using different weights. The weights of the spatial streams in four networks are varied in intervals of 0.1, and a total of 40 experiments are conducted. It is observed that when the weight of the RGB stream is 0.6, the accuracy of all networks is the highest, indicating that the modification of the weight ratio is effective. The reason for this is mainly that the color and texture information in the RGB stream are very important visual features that can well represent the visual details and context of different actions. The optical flow information, however, may contain disturbances from complex scenes or camera motion. By fully utilizing the color and texture information in the RGB stream, the deficiencies in the optical flow information can be compensated, especially after the inclusion of the SimAM and joint loss, where an improvement in accuracy is observed.

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