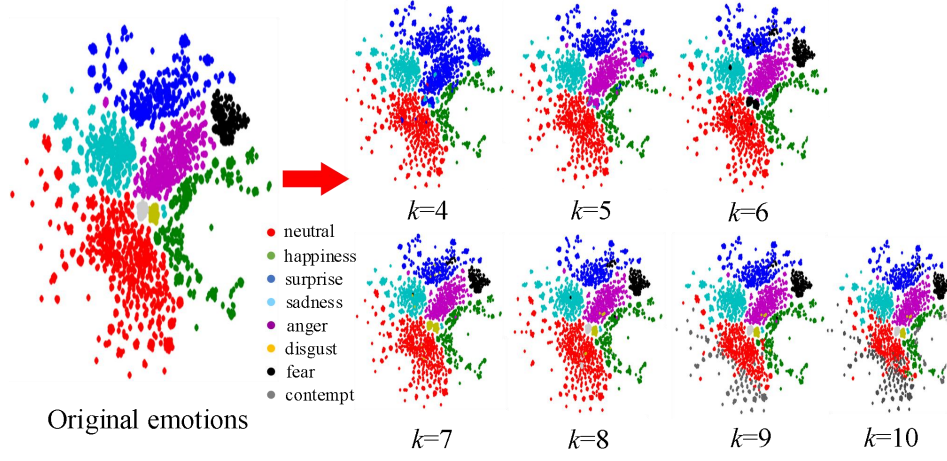
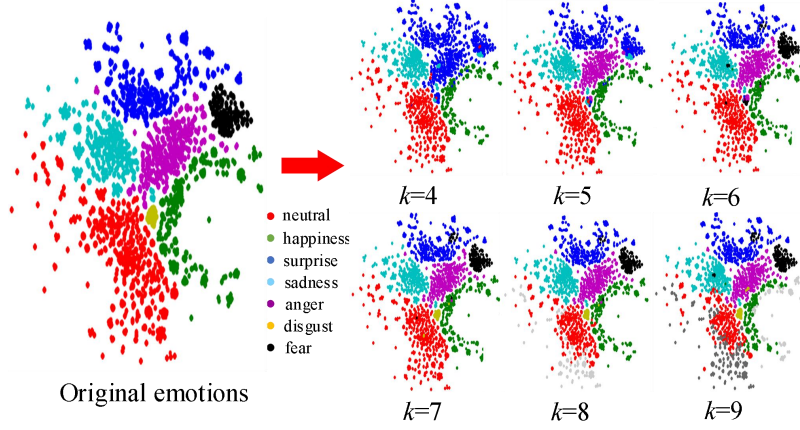


Appendix

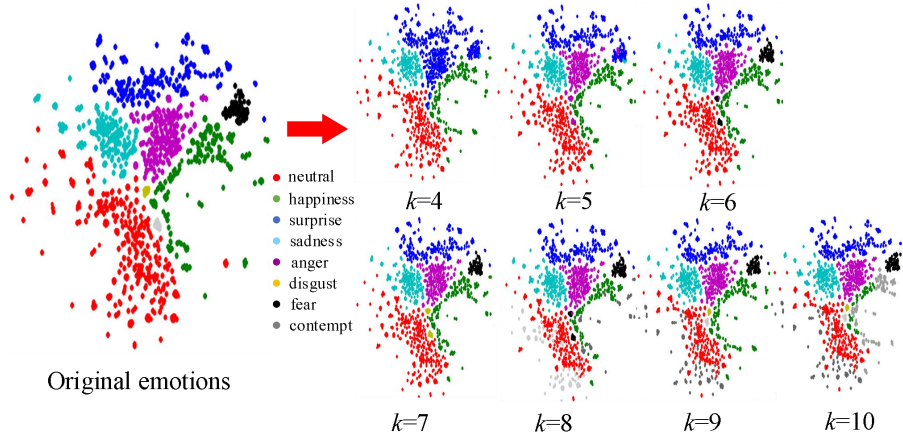
We show all the visualization results of different emotional clusters distribution of O_{Ori} , O_{Div} , O_5 , O_{5-Div} in Fig.1, and the recognition confusion matrix of different emotional clusters of O_{Ori} , O_{Div} , O_5 , O_{5-Div} in Fig.2 and Fig.3.



(a) O_{Ori} dataset



(b) O_{Div} dataset



(c) O_5 dataset

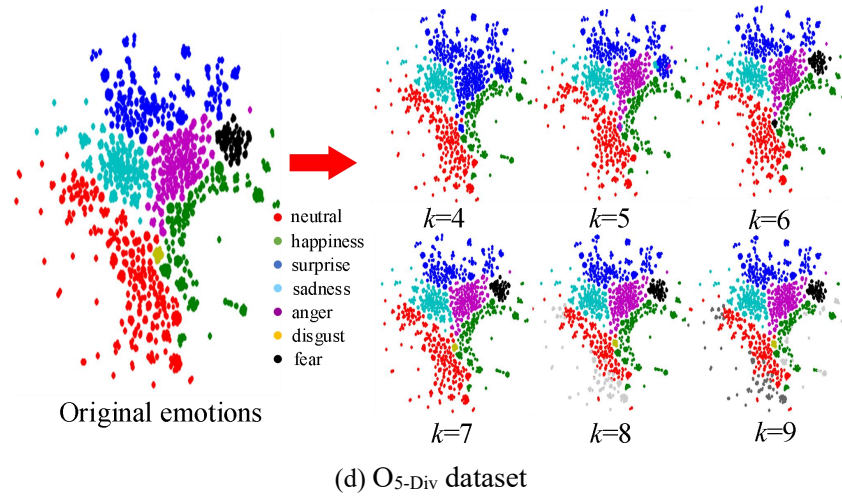
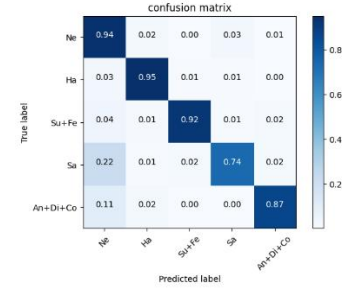
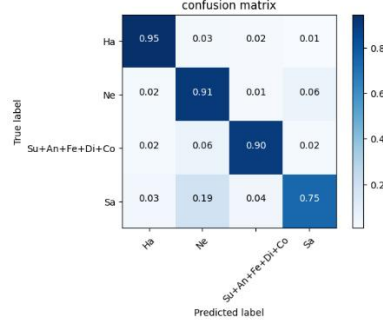
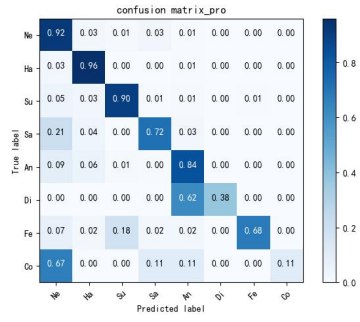


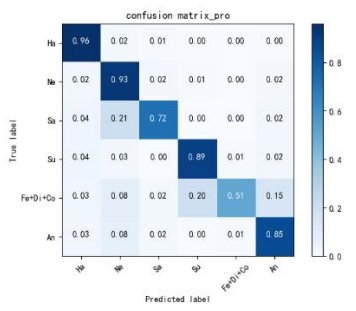
Fig.1. Visualization results of the clustering emotional ‘clusters’ distribution: (a) emotional cluster distribution of O_{Ori} dataset, (b) emotional cluster distribution of O_{Div} dataset, (c) emotional cluster distribution of O₅ dataset, and (d) emotional cluster distribution of O_{5-Div} dataset. Here, k represents the number of emotions and the same colour represents the same emotional category.



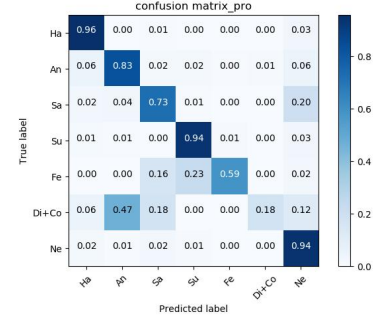
Original emotion categories

$k=4$

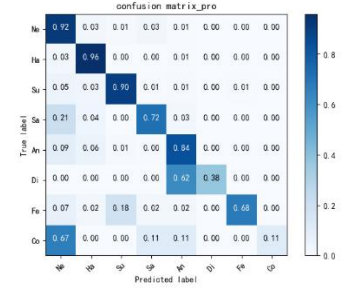
$k=5$



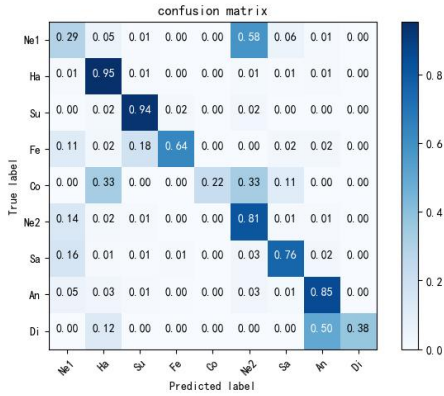
$k=6$



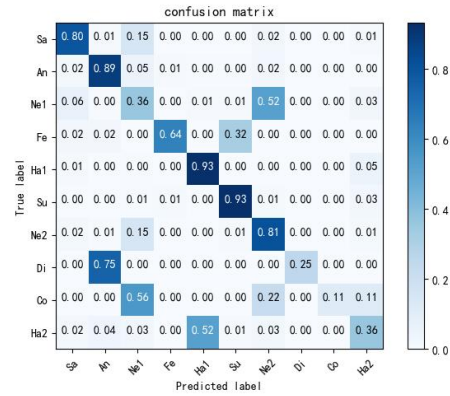
$k=7$



$k=8$



$k=9$



$k=10$

Fig.2. Confusion matrix of emotional ‘clusters’ recognition accuracy on O₅ dataset

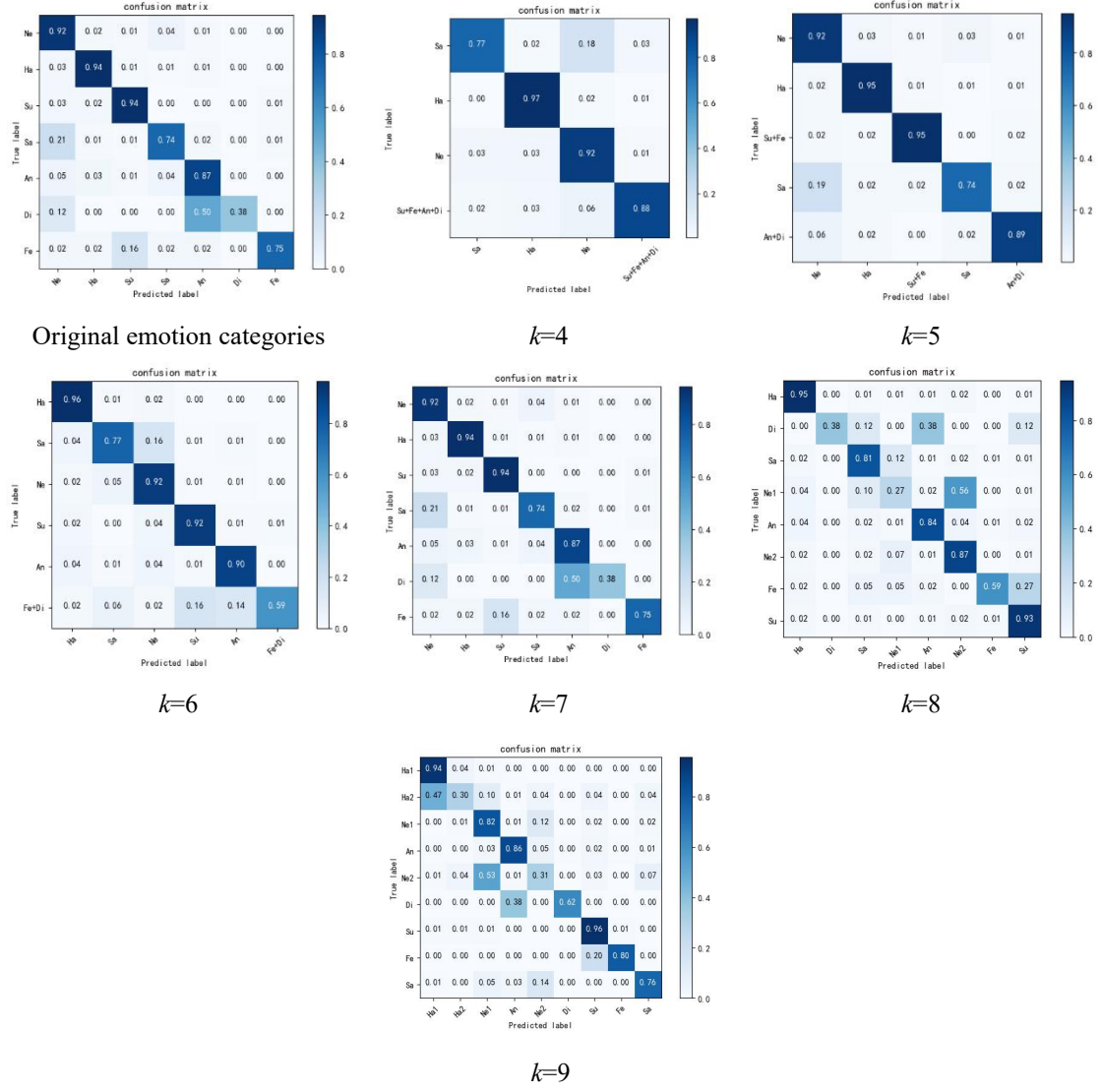


Fig.3. Confusion matrix of emotional ‘clusters’ recognition accuracy on O_{5-Div} test sets