Table 2. Fatigue driving judgment results of ordinary SVM

Degree of fatigue	100 male data in each set			50 female data in each set		
	Sober	Slight fatigue	Severe fatigue	Sober	Slight fatigue	Severe fatigue
Sober	87	16	15	45	9	7
Slight fatigue	13	78	3	5	37	3
Severe fatigue	0	6	82	0	4	40
Accuracy	87%	78%	82%	90%	74%	80%

Table 3. Fatigue driving judgment results of fuzzy SVM

Degree of fatigue	100 male data in each set			50 female data in each set		
	Sober	Slight fatigue	Severe fatigue	Sober	Slight fatigue	Severe fatigue
Sober	92	9	7	46	5	4
Slight fatigue	8	87	2	4	41	1
Severe fatigue	0	4	91	0	4	45
Accuracy	92%	87%	91%	92%	82%	90%

5. CONCLUSION

This paper conducted an in-depth and detailed research on fatigue driving. By examining the features of the eyes and the head of the driver, it extracted feature data and conducted statistical analysis on the extracted feature data to judge the fatigue status of the driver. The study applied improved SVM to fatigue driving judgement, compared with the traditional PERCLOS criterion based on eye status, the proposed method in this paper added head posture parameters, and it has higher accuracy and application value.

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