system such as a hybridization between a WOA2 or WOA3 with the Particle Swarm Optimization algorithm (PSO) and SA.

Table 4. The results of the memetic algorithms with 10 whales

Iteration	Alg.	Mean Fitness	ACC.	Number of Selected features	Exe. Time (Sec.)
5o iterations	WOA	0.30643	0.694	17	2.7
	WOASA	0.30135	0.575	17	137
	WOA2SA	0.28843	0.527	23	143
	WOA3SA	0.29472	0.511	20	152
70 iterations					
	WOA	0.28374	0.715	24	4
	WOASA	0.28852	0.591	14	230
	WOA2SA	0.275	0.556	22	281
	WOA3SA	0.29582	0.605	23	382
100 iterations					
	WOA	0.29404	0.707	17	8
	WOASA	0.27411	0.605	21	353
	WOA2SA	0.26309	0.527	18	363
	WOA3SA	0.27149	0.621	23	332
150 iterations					
	WOA	0.29693	0.704	19	8
	WOASA	0.2692	0.595	15	823
	WOA2SA	0.29693	0.625	19	775
	WOA3SA	0.28821	0.538	19	449

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