Case studies and results for the paper "Investigating the Configurations of an Industrial Path Planner in Terms of Collision Avoidance"

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TABLE I: Traffic situations

Name	Description
$\mathcal{S}_{RightTurn}$	At the intersection, the ego car must turn right. Another car is crossing from right, and another car is crossing from the opposite direction
$\mathcal{S}_{CarsSides}$	The ego car is proceeding on its lane and two cars are crossing the main road, one from left, and another one from right
$\mathcal{S}_{HiddenCar}$	At the intersection, the ego car must turn right. A car, hidden by some other cars waiting at the stop, is crossing from the opposite direction
$\mathcal{S}_{FrontParked}$	The ego car must overtake a parked car, but there is a car coming from the opposite direction on the passing lane

(a) $\mathcal{S}_{RightTurn}$

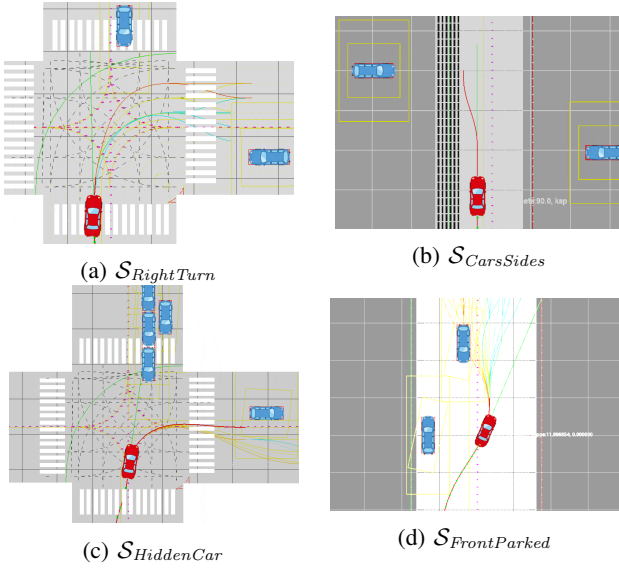(b) $\mathcal{S}_{CarsSides}$

(c) $\mathcal{S}_{HiddenCar}$

(d) $\mathcal{S}_{FrontParked}$

Fig. 1: Baseline scenarios

TABLE II: Results for $\mathcal{S}_{RightTurn}$

(a) Rank of fuzzy sets

rank	weight w_i	π_j	$\Phi^{\pi_j^{w_i}}$
1	w_{latg}	VL	0.63
2	w_{latg}	L	0.62
2	w_{latg}	SL	0.62
4	w_{latg}	M	0.43
...	...	...	...
39	$w_{curvature}$	VS	0.23
40	w_{latg}	SS	0.20
41	w_{latg}	S	0.06
42	w_{latg}	VS	0.03

(b) Rank of runtime flags

rank	runtime flag rf_i	Φ^{rf_i}
1	$rf_{curvature}$	1.00
2	rf_{decMax}	0.82
3	rf_{accMax}	0.15
3	rf_{latg}	0.15
5	rf_{spd}	0.00
5	$rf_{safeDist}$	0.00

TABLE III: Results for $\mathcal{S}_{CarsSides}$

(a) Rank of fuzzy sets

rank	weight w_i	π_j	$\Phi^{\pi_j^{w_i}}$
1	$w_{safeDist}$	L	0.48
2	$w_{safeDist}$	SL	0.46
3	$w_{safeDist}$	VL	0.42
4	w_{latg}	S	0.34
...	...	...	...
39	w_{latg}	VS	0.21
40	$w_{safeDist}$	S	0.20
41	w_{decMax}	VS	0.19
42	$w_{safeDist}$	VS	0.17

(b) Rank of runtime flags

rank	runtime flag rf_i	Φ^{rf_i}
1	rf_{latg}	0.72
2	rf_{accMax}	0.50
2	rf_{decMax}	0.50
4	rf_{spd}	0.00
4	$rf_{curvature}$	0.00
4	$rf_{safeDist}$	0.00

TABLE IV: Results for $\mathcal{S}_{HiddenCar}$

(a) Rank of fuzzy sets

rank	weight w_i	π_j	$\Phi^{\pi_j^{w_i}}$
1	$w_{safeDist}$	VS	0.045
2	$w_{safeDist}$	VL	0.043
3	w_{accMax}	S	0.035
4	$w_{curvature}$	SL	0.029
...	...	...	...
39	w_{accMax}	SL	0.008
40	w_{decMax}	VS	0.006
41	w_{accMax}	VS	0.005
42	w_{latg}	VS	0.002

(b) Rank of runtime flags

rank	runtime flag rf_i	Φ^{rf_i}
1	rf_{spd}	1.00
1	$rf_{curvature}$	1.00
3	rf_{accMax}	0.98
4	rf_{latg}	0.50
5	rf_{decMax}	0.47
6	$rf_{safeDist}$	0

TABLE V: Results for $\mathcal{S}_{FrontParked}$

(a) Rank of fuzzy sets

rank	weight w_i	π_j	$\Phi^{\pi_j^{w_i}}$
1	w_{decMax}	VS	0.66
2	w_{decMax}	S	0.62
3	w_{accMax}	VS	0.62
4	w_{decMax}	M	0.61
...	...	...	...
39	$w_{safeDist}$	VL	0.42
40	w_{decMax}	SL	0.41
41	w_{accMax}	VL	0.35
42	w_{decMax}	VL	0.34

(b) Rank of runtime flags

rank	runtime flag rf_i	Φ^{rf_i}
1	rf_{decMax}	1.00
2	rf_{accMax}	0.24
3	rf_{latg}	0.08
4	rf_{spd}	0
5	$rf_{curvature}$	0
6	$rf_{safeDist}$	0