AutonomousRacingResults

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Kernel Safety Tests

Firstly, we run random tests to ensure that the kernels are safe and that they do work.

map_name	SSS_avg_times	SSS_std_dev	SSS_avg_interventions	SSS_std_inters	SSS_success_rate
columbia_small	16.5418	0.2027431	115.12	15.71196	100
porto	17.9146	0.2440058	117.01	14.24675	100

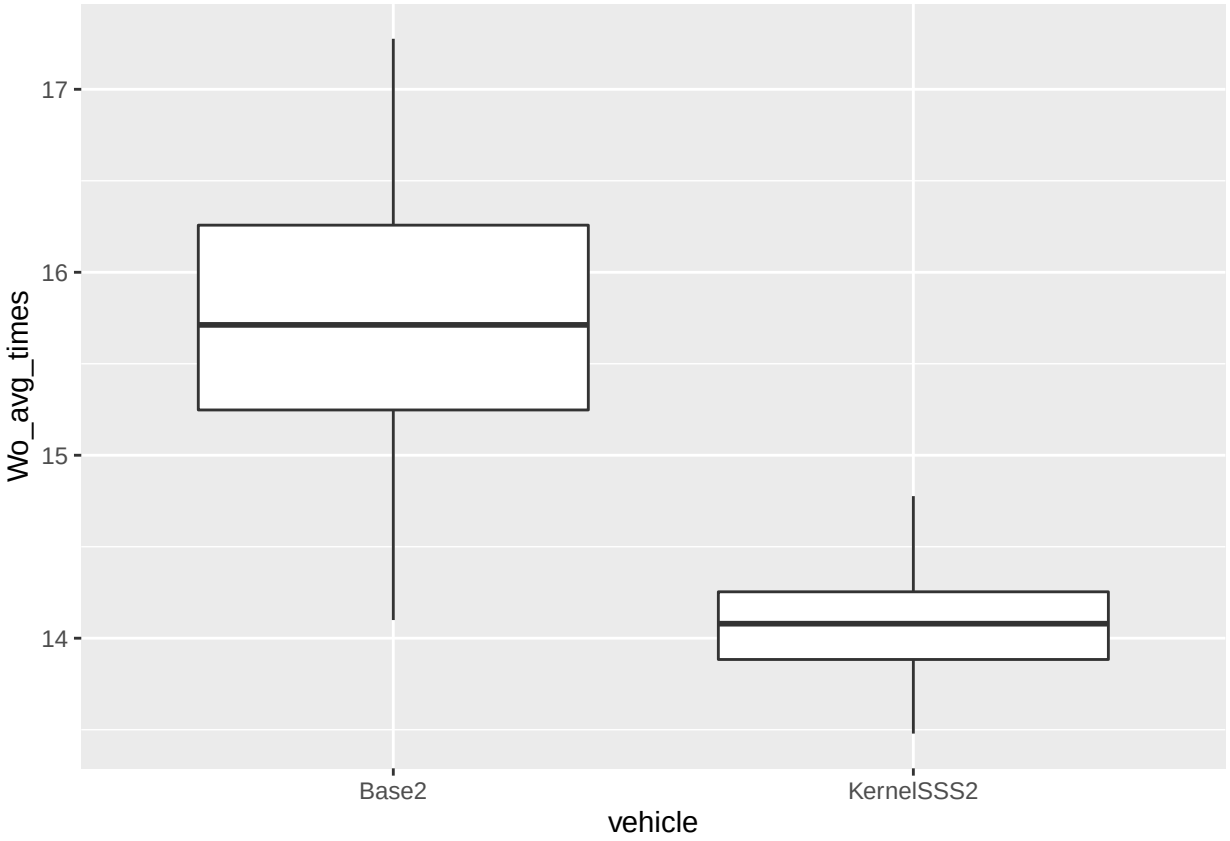
Learning Investigation

agent_name	rk	constant_reward	SSS_avg_times	SSS_std_dev	SSS_avg_interventions
KernelSSS_1_2BasePenalty	0.00	1	14.192	0.0153623	0.0
KernelSSS_1_3Bias01	0.01	1	13.800	0.0126491	0.8
KernelSSS_1_3Bias02	0.02	1	13.917	0.0141774	3.1
KernelSSS_1_4Bias04	0.04	1	14.326	0.0149666	0.0
KernelSSS_1_5Bias1	0.10	1	13.466	0.0290517	26.9

Training Comparision

Performance

Stability




```
##         agent_name     Base2         KernelSSS2
##  Baseline_100: 1   Min.   :14.10   Min.   :13.48
##  Baseline_101: 1   1st Qu.:15.25   1st Qu.:13.88
##  Baseline_102: 1   Median :15.71   Median :14.08
##  Baseline_103: 1   Mean   :15.72   Mean   :14.11
##  Baseline_104: 1   3rd Qu.:16.26   3rd Qu.:14.25
##  Baseline_105: 1   Max.   :17.28   Max.   :14.78
##  (Other)     :92   NA's   :50      NA's   :48
```

Benchmarking

vehicle	Wo_avg_times_columbia_small	Wo_avg_times_porto	Wo_std_dev_columbia_small	Wo_std_dev_porto
PP	14.1500	13.9300	0.0000000	0.0000000
KernelSSS1	15.1130	14.2842	0.0191572	0.0543356
FGM	14.5585	14.8048	0.0105238	0.0181923
Base1	15.6981	15.2148	0.0234817	0.0645055

vehicle	map_name	Wo_avg_times	Wo_success_rate
PP	columbia_small	14.1500	66
PP	porto	13.9300	100
KernelSSS1	porto	14.2842	100
KernelSSS1	columbia_small	15.1130	100
FGM	porto	14.8048	100
FGM	columbia_small	14.5585	100
Base1	columbia_small	15.6981	100
Base1	porto	15.2148	100