

Simulation metrics

		CONCRETE	GRASS	ROCK	WOOD	RUBBER	PLASTIC	SNOW	ICE
Acc (\uparrow)	Vision	0.70	0.74	0.70	0.76	0.81	0.82	0.92	0.82
	Proposed	0.83	0.77	0.79	0.82	0.83	0.85	0.99	0.84
PSNR (\uparrow)	Vision	8.48	11.91	11.90	8.97	12.01	11.26	16.66	11.12
	Proposed	11.59	12.07	13.43	10.44	12.07	12.07	21.76	11.44
SSIM (\uparrow)	Vision	0.70	0.73	0.69	0.74	0.79	0.80	0.92	0.81
	Proposed	0.80	0.75	0.77	0.79	0.79	0.82	0.98	0.82
BCE (\downarrow)	Vision	2.72	2.67	2.73	2.58	2.86	2.53	1.60	2.69
	Proposed	2.29	2.61	2.45	2.40	2.83	2.46	1.39	2.63

The vision-only baseline uses the SegFormer+FastSAM network. The proposed approach uses the same network for visual classification and uses simulated property measurements to update semantic predictions.

Demo

