

Break through the reCAPTCHA!

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<https://github.com/hwangtoemat>

Break through the security program for preventing macros, reCAPTCHA, using Inception Net.



< In the task of finding a bus, cut and recognize nine images.>

image	Classification list	Result (including bus)
	[0.01713592 0.220194 0.32430175 ... 0.04429837 0.45024732 0.74318194] 1.000000055486121 moving van (score = 0.88130) mobile home, manufactured home (score = 0.01395) trolleybus , trolley coach, trackless trolley (score = 0.00704) recreational vehicle, RV, R.V. (score = 0.00670) screen, CRT screen (score = 0.00647)	moving van (score = 0.88130) trolleybus , trolley coach, trackless trolley (score = 0.00704)
	[0.0549377 0.30850297 0.22763574 ... 1.7766068 0.00376792 0.25241265] 1.0000000427292095 trailer truck, tractor trailer, trucking rig, rig, articulated lorry, semi (score = 0.27748) screen, CRT screen (score = 0.07644) seashore, coast, seacoast, sea-coast (score = 0.05602) mobile home, manufactured home (score = 0.04128) moving van (score = 0.04013)	trailer truck, tractor trailer, trucking rig, rig, articulated lorry, semi (score = 0.27748)
	[0.00145744 0.11659112 0.17367834 ... 0.00071033 0.5854828 0.0129638] 1.0000000027875422 minivan (score = 0.27904) limousine, limo (score = 0.15171) beach wagon, station wagon, wagon, estate car, beach waggon, station waggon, waggon (score = 0.03744) convertible (score = 0.03311) moving van (score = 0.03308)	minivan (score = 0.27904)

	<p>[0.00990175 0.9685287 0.31178293 ... 1.3008262 0.0576346 0.10289919] 0.9999999604252952</p> <p>airliner (score = 0.15085)</p> <p>traffic light, traffic signal, stoplight (score = 0.11815)</p> <p>trailer truck, tractor trailer, trucking rig, rig, articulated lorry, semi (score = 0.08724)</p> <p>minivan (score = 0.05094)</p> <p>tow truck, tow car, wrecker (score = 0.02921)</p>	airliner (score = 0.15085)
	<p>[0.14703608 0.54500717 0.20817561 ... 0.06906874 0.02104224 0.53336644] 1.0000001016029592</p> <p>seashore, coast, seacoast, sea-coast (score = 0.34633)</p> <p>lakeside, lakeshore (score = 0.07779)</p> <p>aircraft carrier, carrier, flattop, attack aircraft carrier (score = 0.07082)</p> <p>airliner (score = 0.03907)</p> <p>screen, CRT screen (score = 0.03290)</p>	seashore, coast, seacoast, sea-coast (score = 0.34633)
	<p>[0.1279344 0.46773273 0.21514039 ... 0.47197476 0.00564384 0.06837849] 0.9999999649831023</p> <p>seashore, coast, seacoast, sea-coast (score = 0.17883)</p> <p>moving van (score = 0.14313)</p> <p>mobile home, manufactured home (score = 0.12812)</p> <p>steel arch bridge (score = 0.05202)</p> <p>worm fence, snake fence, snake-rail fence, Virginia fence (score = 0.03111)</p>	seashore, coast, seacoast, sea-coast (score = 0.17883)
	<p>[0.02299854 0.4316006 0.12859347 ... 0.17126712 0.29809484 1.2087082] 1.0000000392478876</p> <p>school bus (score = 0.94381)</p> <p>amphibian, amphibious vehicle (score = 0.00123)</p> <p>passenger car, coach, carriage (score = 0.00105)</p> <p>trolleybus, trolley coach, trackless trolley (score = 0.00092)</p> <p>streetcar, tram, tramcar, trolley, trolley car (score = 0.00081)</p>	school bus (score = 0.94381)
	<p>[0.22233006 0.14765924 0.18100125 ... 0.30856758 0.07331686 0.07947817] 1.000000068288449</p> <p>seashore, coast, seacoast, sea-coast (score = 0.11261)</p> <p>screen, CRT screen (score = 0.11248)</p> <p>sandbar, sand bar (score = 0.06372)</p> <p>yawl (score = 0.05485)</p> <p>airliner (score = 0.03149)</p>	seashore, coast, seacoast, sea-coast (score = 0.11261)
	<p>[0.01352633 0.2717498 0.32954383 ... 0.17944174 0.12297636 1.1163125] 1.0000002177288434</p> <p>school bus (score = 0.91695)</p> <p>trolleybus, trolley coach, trackless trolley (score = 0.00179)</p> <p>moving van (score = 0.00167)</p> <p>thresher, thrasher, threshing machine (score = 0.00128)</p> <p>tobacco shop, tobacconist shop, tobacconist (score = 0.00108)</p>	school bus (score = 0.91695)

<Conclusion>

The picture quality was not very good, but we all correctly determined whether the bus was included. Program using 'Inception Net' will be able to break through the 'reCAPTCHA'.