Sensors	Pros	Cons
Cameras	"- best for recognition - less power intensive - high-resolution imagery - cheap - advanced AI and deep learning research"	"- light and visibility dependent - easily affected by shadow or reflection"
Radar	"- captures direct distance and velocity - day and night reliability - weather resilient - long-range detection - cheap"	"- object boundary is not great - limited classification capability - poor resolution - inability to detect small objects"
LiDAR	"- direct 3D mapping of the enviroment - day and night reliability - very high precision - high resolution - advanced AI research"	"- ineffective under rain and fog - lower range compared to radar - very expensive"
Ultrasonic	"- all-material sensing capability - best close-range object detection (parking) - not affected by weather conditions - extremely cheap"	"- can be affected by wind - highly sensitive to vapors - difficulties in distinguishing between soft, curved, thin, and small objects"
GPS	"- provides global coverage - precise location information - adaptable to change - cheap"	"- signal interference in places with signal obstructions (tunnels) - latency issues - dependent on accurate maps and data processing capabilities"