

Appendix 4: ACR sensory system labels

label	sensors and representative words	label	sensors and representative words
S ₁	laser, ultrasonic, CCD camera	S ₈₀	infrared, camera
S ₂	camera, pressure sensor, force sensor, magnetostriction sensor, tactile sensor, gyro	S ₈₁	angle sensor
S ₃	position sensor, camera	S ₈₂	laser, lidar/ladder
S ₄	image sonars, camera, LBL, gyro	S ₈₃	IMU, laser
S ₅	pressure sensor, tactile sensor	S ₈₄	GPS, lidar, camera, angle sensors, most sensors, distance sensors, force sensor, soil, depth sensor, radar, ultrasonic sensors, IMU
S ₆	torque/force sensor, force sensor	S ₈₅	pressure sensor, speed sensor, proximity sensors
S ₇	camera	S ₈₆	range sensor, displacement sensor, GPS
S ₈	pressure sensor	S ₈₇	range sensors, distance sensor
S ₉	visual sensor	S ₈₈	pressure sensors, laser sensor
S ₁₀	ultrasonic	S ₈₉	liquid based sensor
S ₁₁	visual sensor, touch sensor, optical detector, arc weaving sensor	S ₉₀	IR sensor, F/T sensor, acceleration sensor
S ₁₂	tactile sensing system, welding sensor	S ₉₁	elasto-magnetic (E/M) sensor
S ₁₃	arc sensor, laser	S ₉₂	robust sensor, pressure sensors, force sensors
S ₁₄	laser	S ₉₃	LPG sensor, a smoke sensor
S ₁₅	laser, torch sensor	S ₉₄	LTK, GPS, pseudofiles, laser, NLS
S ₁₆	CCD camera, stereo sensor	S ₉₅	sonar system
S ₁₇	lidar sensors, IMU, Kinetic	S ₉₆	camera, accelerometers
S ₁₈	various sensors, sensor system	S ₉₇	front rear sensors, wireless camera
S ₁₉	3D laser, camera, torch sensor, galvanometer scanner	S ₉₈	analogy voltage sensor, laser profile probe
S ₂₀	vacuum sensor, air pressure sensor, position sensor, camera	S ₉₉	orientation and proximity sensors, CCD camera, thermographic sensors
S ₂₁	distance sensor, tilt sensor	S ₁₀₀	ultrasonic sensor, Infrared sensor, dangerous gas sensor, noise sensor, light sensor
S ₂₂	position sensor	S ₁₀₁	lidar, IMU
S ₂₃	rotation angles sensors, vacuum sensors, accelerometers, pressure sensor	S ₁₀₂	ultrasonic, Infrared, laser
S ₂₄	light sensor, infrared proximity sensors	S ₁₀₃	camera, laser scanners, inclinometer
S ₂₅	infrared distance sensors, camera	S ₁₀₄	gyro sensor, laser sensor, CCD camera
S ₂₆	shock sensor, infrared ray sensor, laser sensor, magnetic sensor	S ₁₀₅	DSLR camera, rotating sensor
S ₂₇	laser radar, GPS, RFID	S ₁₀₆	camera, force, laser
S ₂₈	alignment sensor, brake check sensor, obstacle detecting sensors, laser sensors, ultrasonic sensor, HMR sensor	S ₁₀₇	radar, acoustic sensors, electrical resistivity sensors, impact-echo, ultrasonic, cameras
S ₂₉	camera, laser, lidar	S ₁₀₈	camera, LED, light
S ₃₀	GPS, generic pose sensor	S ₁₀₉	GPS, camera
S ₃₁	tactile senses, force sensor	S ₁₁₀	a pressure sensor, Rotary encoder, potentiometer
S ₃₂	camera, GPS, dust meter	S ₁₁₁	camera, force, laser, pressure
S ₃₃	force sensor, ultrasonic sensor	S ₁₁₂	vision sensor, proximity sensor, peripheral sensors
S ₃₄	force sensor, sonar sensor	S ₁₁₃	rotation angle, encoder sensor, laser, accelerometer

S ₃₅	vision-based, parameters estimation, single-image measurement, segmentation	S ₁₁₄	ultrasonic sensors, encoders, IMU, yaw angle sensor, sonar sensors
S ₃₆	optical sensors, touch sensor	S ₁₁₅	proximity sensor
S ₃₇	ultrasonic sensor, 2D LIDAR	S ₁₁₆	IMU, force sensor
S ₃₈	cameras, pressure force sensor	S ₁₁₇	camera, encoder, proximity
S ₃₉	camera, image, CCD, Kinect	S ₁₁₈	camera, sonar sensor, temperature sensor, airflow sensors, laser
S ₄₀	position sensor, velocity sensor	S ₁₁₉	optical (IR) sensor
S ₄₁	position sensor, load sensor	S ₁₂₀	pressure sensor, tensioner sensor, magneto strictive sensor
S ₄₂	rotation sensor, force sensor	S ₁₂₁	meteor-sensors, proximity sensor, navigation sensor
S ₄₃	joint sensor	S ₁₂₂	power/torque sensor
S ₄₄	force sensor, pressure transducers	S ₁₂₃	force/ touch sensor
S ₄₅	force and position sensors, ground penetrating radar (GPR), laser	S ₁₂₄	photoelectric sensor
S ₄₆	force, pressure, laser	S ₁₂₅	ultra-sonic sensor, magnetic sensor, camera
S ₄₇	force sensors, Laser, GPS, INS	S ₁₂₆	laser, camera, tempo sonics
S ₄₈	work environment sensors, GPS, IMU, lidar	S ₁₂₇	3D sensor
S ₄₉	infrared sensor	S ₁₂₈	force sensor, pressure sensor, provision sensor, vision sensors
S ₅₀	position sensor, force sensor	S ₁₂₉	optical, ultrasonic, laser
S ₅₁	bump sensor	S ₁₃₀	camera, pressure sensor, displacement sensor
S ₅₂	on-board camera, live video, inductive sensors	S ₁₃₁	gyroscopes, force/torque sensor, video cameras
S ₅₃	lidar, distance sensor, IMU, inductive sensor, Contact sensors	S ₁₃₂	CCD cameras, acceleration sensors, position sensors, magnetic stroke sensors
S ₅₄	laser, cameras, Kinect	S ₁₃₃	a stereo camera, acceleration sensors
S ₅₅	load cell sensor	S ₁₃₄	magnetic stroke sensors, pressure sensors, stereo camera
S ₅₆	ultrasonic, position camera	S ₁₃₅	force sensor, tracker sensor, stereo camera
S ₅₇	environmental sensor	S ₁₃₆	camera, position, pressure
S ₅₈	F/T sensors force/torque, environmental sensor	S ₁₃₇	position sensors, magnetic stroke sensors, pressure sensors
S ₅₉	position and forces sensor	S ₁₃₈	axis sensors
S ₆₀	infrared sensor, force sensor, camera	S ₁₃₉	stereo camera, acceleration sensors, a gyro sensor
S ₆₁	optical sensor, camera	S ₁₄₀	pressure sensor, electronic compass, displacement transducers
S ₆₂	IMU	S ₁₄₁	angle sensor, ultrasonic sensors
S ₆₃	proximity sensor, multiple sensors, camera	S ₁₄₂	light sensors, humidity/temperature sensors, sonar sensors, ultrasonic range sensor, infrared distance measuring sensors, CMOS image sensor
S ₆₄	force, laser	S ₁₄₃	GPS, IMU
S ₆₅	camera, tactile	S ₁₄₄	camera, angle, lidar, GPS
S ₆₆	GPS, position sensor, reference sensor	S ₁₄₅	attitude sensor, acceleration sensor, camera, displacement sensor
S ₆₇	GPS	S ₁₄₆	Kinect, accelerometers, IMUs
S ₆₈	GPS, inclinometer	S ₁₄₇	webcam
S ₆₉	GPS, laser	S ₁₄₈	IMU, camera
S ₇₀	laser, position	S ₁₄₉	force-torque sensor, camera/vision

S ₇₁	force-torque, photoelectric sensor	S ₁₅₀	RGB LED
S ₇₂	camera, proximity sensor, F/T sensor	S ₁₅₁	height sensor
S ₇₃	tilt sensor, distance sensor, camera, laser scanner, gyroscope	S ₁₅₂	stroke sensor, temperature sensor, hydraulic sensor, potentiometer
S ₇₄	ultrasonic sensor, displacement transducers, ranging transducer, laser scanner	S ₁₅₃	RFID, humidity sensor, temperature sensor, Kinect Sensor
S ₇₅	laser distance, stereo infrared sensor	S ₁₅₄	equivalent sensor
S ₇₆	distance sensor	S ₁₅₅	presence sensor, IR interrupt sensor, LVDT inductive sensors
S ₇₇	force sensor, pose sensor	S ₁₅₆	RGB camera, IMU
S ₇₈	actuators and electronic sensors, stop sensor	S ₁₅₇	Zigbee sensors, laser finder
S ₇₉	lidar, camera	S ₁₅₈	depth sensor, colour sensors, camera