
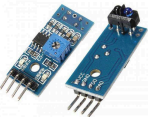



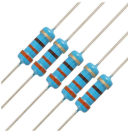




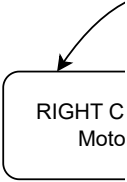
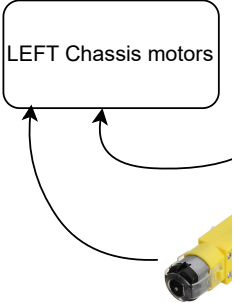


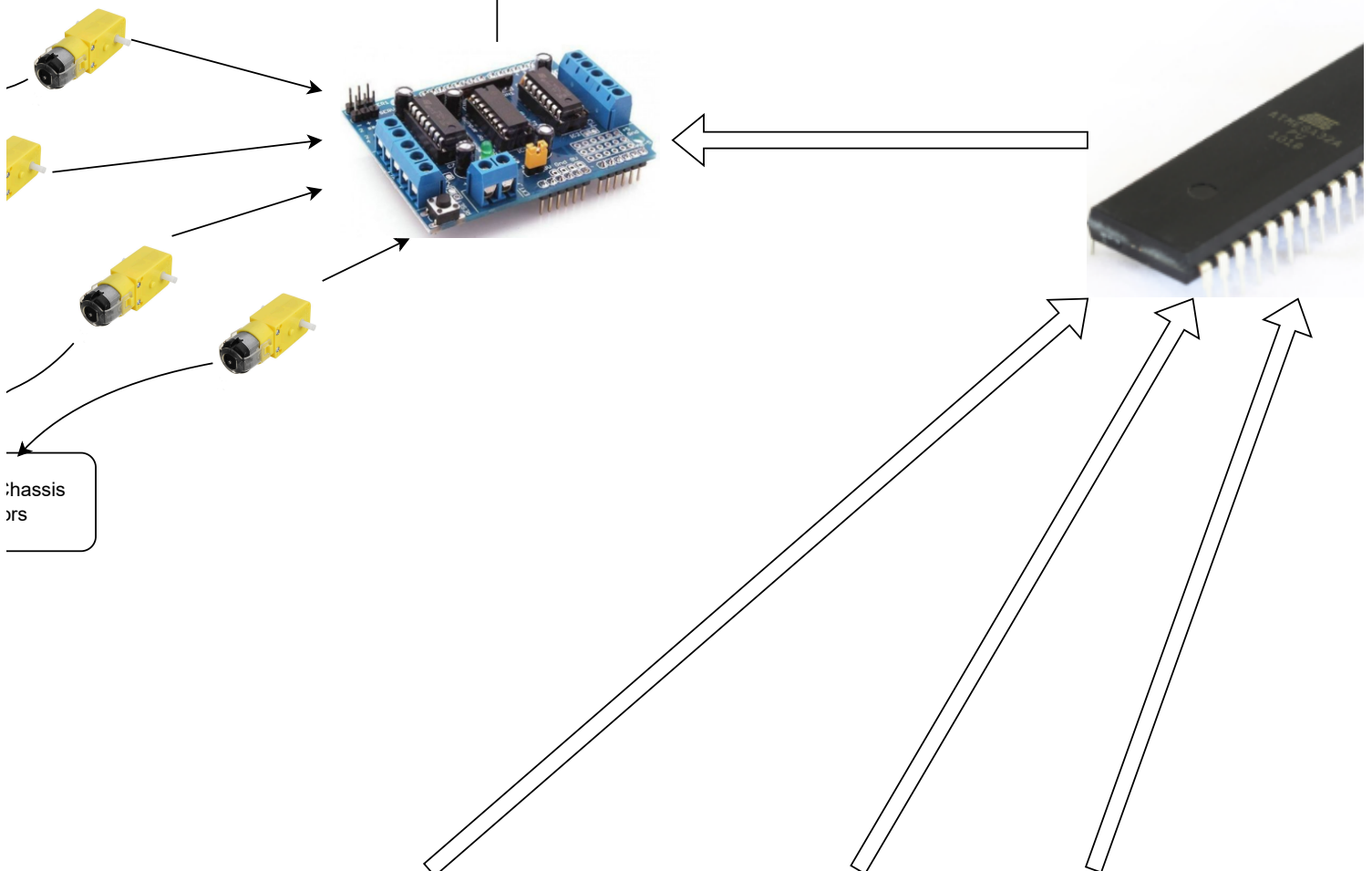
Components		
1x L293D Motor Driver module 	1x TCRT5000 module 	1x Robot car chassis (4WD) 
1x ATmega32A MCU 	1x 16MHZ crystal + 2x 22pF Capacitors 	Resistors selection 
2x or 3x 18650 Batteries 	Step up module 	HC-SR04 Ultrasonic sensor 
SG-90 Servo motor 		



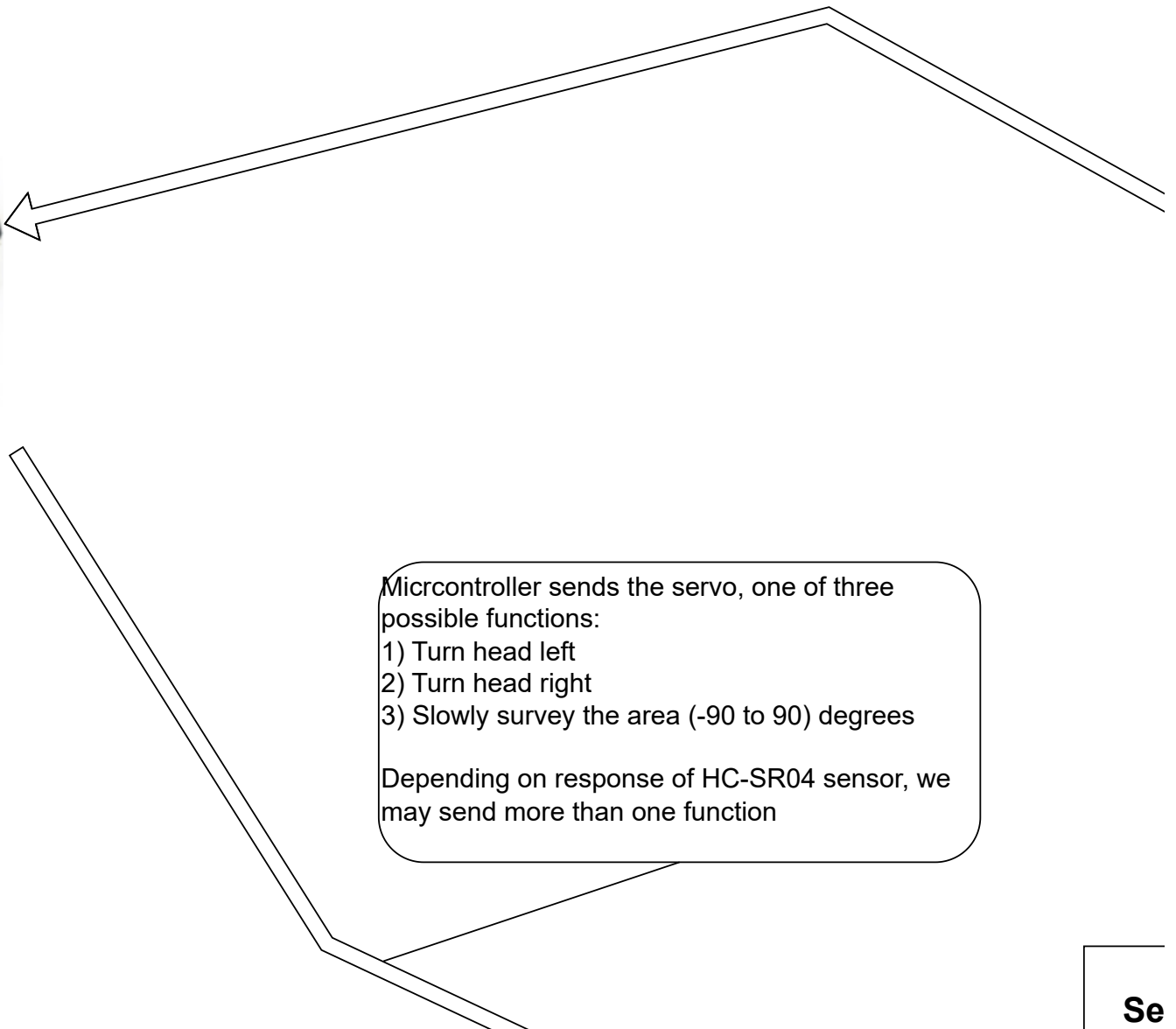
Autonomous Vehicle (AMIT Di

L293D module connects to the ATmega32A and controls 4 motors and has 4 functions

- 1) Steer the vehicle left
- 2) Steer vehicle right
- 3) Turn on all motors forward
- 4) Reverse direction of motors to go backwards

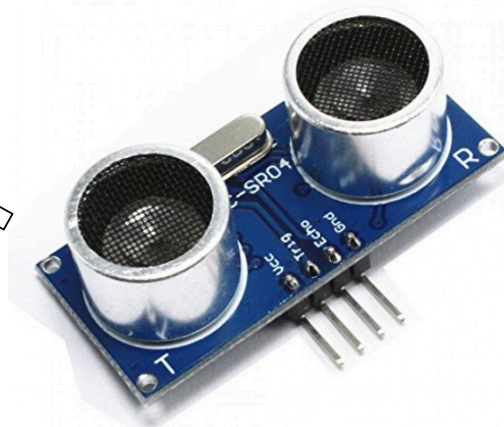


iploma Graduation Project)



Ultra sonic sensor detects if there are any obstacles near ($< 30\text{cm}$) and communicates with the MCU to take the appropriate action.

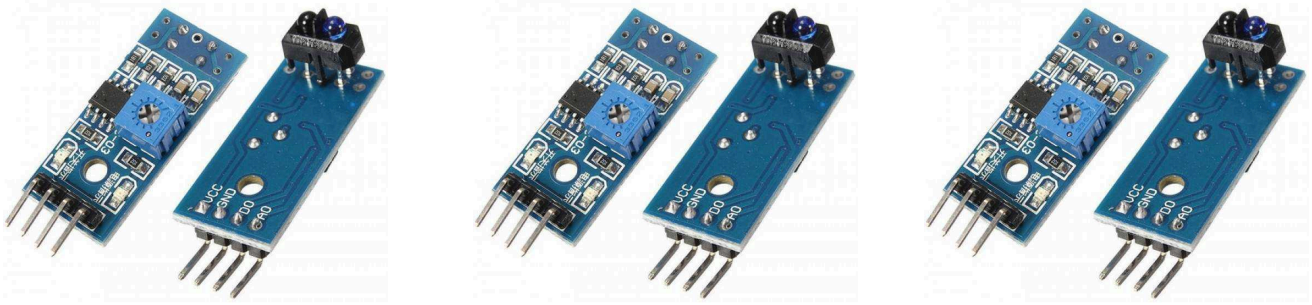
The MCU again communicates with the Servo and if there are no obstacles present, the MCU issues appropriate action for motors.



Servo turns left

Servo Surveys (-90 to 0
to 90)

Servo turns right



Three TCRT5000 tracking modules are installed at the bottom of the Car Chassis.

MCU checks each of the three values constantly in order to maintain balance value at the middle sensor, if there is any variation.

If Left sensor is 1 then the car steers right.

if Right sensor is 1 then the car steers left.

if the center sensor is on 0, then the car is going in the right direction and is following the line.

