Hardware components

	Quantity, pcs.	Link
MIKRIK V2 Chassis Kit Laser cut provided CAD parts from a 3mm thickness plastic sheets, and 3D-print standoffs. If you're unable to do that, I can support you with a plastic chassis or ready-to-run customized robot, please contact me for more info.	1	https://www.tindie.com/products/mxlfrbt/mikrik-v2-two-wheel-drive-robot-chassis-kit/
LattePanda Delta 3 Great board to build ROS2 robots with help of the Intel Robotics SDK. But if you don't have it, you might use any Intel NUC based on Core, Celeron, Atom or the latest N100 CPU like Radxa, or UP7000.	1	https://www.dfrobot.com/product-2594.html?tracking=62f46c260c041
Raspberry Pi RaspberryPI 4B 4GB Controller of the robot. It will run ROS1 and read encoders data, and send commands to the motors. Host computer will communicate with it using ROS1-ROS2 bridge.	1	https://www.raspberrypi.com/products/raspberry-pi-4-model-b/
Intel Realsense D435(i) 3D-vision camera Order any used 3D-camera on Ebay to save money. You can either have version 435 or 435i with IMU, doesn't matter.	1	https://www.ebay.com/sch/i.html?_nkw=realsense+d435&_sacat=0
DFRobot TT Motor with Encoder (6V 160RPM 120:1) L-shape Motors to move robot around.	2	https://www.dfrobot.com/product-1457.html
DFRobot Motor Driver HAT(v1.0) for Raspberry PI Motor driver to control robot motors.	1	https://www.dfrobot.com/product-1911.html
DFRobot Plastic rubber wheel Wheels for the robot chassis.	2	https://www.dfrobot.com/product-1911.html
DFRobot Metal-ball caster wheel Ball-wheel to support robot chassis to stand on two main wheels.	1	https://www.dfrobot.com/product-225.html
Powebank >60W to power LattePanda You can use any powerful powerbank that can be used to power a laptop, so you can have an autonomous power supply for a host computer.	1	https://a.co/d/52PHagL
Original PS4 gamepad I can't guarantee that copy will work, but if you have a copy first make a try.	1	https://a.co/d/bieJe06
8GB or 16GB microSD SD-card to install Ubuntu. For lazy guys, I created an image that you can burn using DiskImage on Windows or something similar on Linux. Download image here:	1	https://a.co/d/8lO5Oup
2S Li-Po battery Battery to power-up a motor driver, motors and Raspberry.	1	https://a.co/d/57iFE45
Li-Po Battery charger Charger to charge your batteries. You need any charger that can charge up to 3S Li-Po battery.	1	https://a.co/d/8bTHJSr
Ethernet cable 0.5ft You can use up to 1ft Ethernet cable. Use any slim and soft Ethernet cable that ca easily bend and fit inside a small robot chassis.	1	https://a.co/d/8lovOSA
Deans-T connector Connector to power-up a motor driver and Raspberry. Just cut red connector, to have bare cables to insert into DFRobot Motor Driver HAT screw terminal.	1	https://a.co/d/fXj8QrD
Velcro tape Great Velcro tape to stick LattePanda, power bank and Raspberry PI to the chassis plastic plate and to avoid having any mechanical connection.	1	https://a.co/d/gq1ovBo
M3x8mm screw Screws to mount metall-ball wheel on the chassis.	1	https://www.dfrobot.com/product-213.html
M3x55mm PCB standoff Standoffs to connect two plates of the chassis together.	4	https://a.co/d/2u0kVo8
M3x10mm screw Screws to fix standoffs with the top and bottom chassis plastic plates. Use them if you will buy metal M3x55mm PCB standoffs.	8	https://a.co/d/civ0NDi
M2.5x10mm screw Screws to fix standoffs with the top and bottom chassis of the 3D-printed plastic plates. Use them if you will 3D-print PCB standoffs by yourself.	8	https://a.co/d/47abmpE
M2.5 nut Nuts to fix M2.5x25mm screws on the side motor plates.	4	https://a.co/d/cZ741lY
M2.5x25mm screw Screws to mount motors on the side motor plates of the chassis.	4	https://a.co/d/fOmLY1t
1/4-20 x 3/8" screw The screw to mount a Realsense camera on the chassis.	1	https://a.co/d/6evGHZp
M2.5x8mm standoff You can buy a plastic generic one, or 3D-print it by using file provided in my Github MIKRIK CAD repo.	8	https://a.co/d/aBxWwSz
M2.5x6mm screw Screws to mount LattePanda and Raspberry PI	8	https://a.co/d/e1scSE9
USB Type C cable Cable to power-up a LattePanda board.	1	https://a.co/d/gVuGczC
SSD M.2 disk 256GB Use any M.2 SSD disk you have. I'm using very expensive 500GB Samsung 980 PRO, but you can proceeed with cheaper option I added.	1	https://a.co/d/dRSXgVc
Audio / Video Cable Assembly, Ultra Slim RedMere HDMI to HDMI Connect LattePanda to the display, or use Type C.	1	https://a.co/d/cutWAZG
micro HDMI cable Connect Rasbperry to the display	1	https://a.co/d/2m84wQ7

Software apps and online services

ROS Robot Operating System Project has two parts: - Robot part running ROS1 using Raspberry PI 4B. It creates an interface to comm	https://www.ros.org/
Intel Robotics SDK Software	https://amrdocs.intel.com/docs/2.2/index.html

Hand tools and fabrication machines

Laser cutter (generic) Laser cut provided CAD parts from a 3mm thickness plastic sheets. If you're unable to do that, I can su	
3D Printer (generic) 3D-print plastic standoffs to connect to pieces of chassis together. You can also purchase metal ones,	
Multitool, Screwdriver Use a screwdriver to fix screws. I'm personally using hexagon socket head screws on the robot mostly.	329/all-in-one-screwdriverbit-set/dp/26W62602COM=ref_backster&CMP=H
Digilent Mastech MS8217 Autorange Digital Multimeter In case of issues, use it.	https://digilent.com/shop/ms8217-autorange-digital-multimeter/