

CONCEPT The open source community in robotics is a group of people and organizations who collaborate to create and share free and open source software, hardware, and knowledge for robotics. Their goal is to make robotics technology more accessible, affordable, and customizable. This community provides resources for knowledge sharing and support, and notable projects include ROS and Arduino.

BACKGROUND

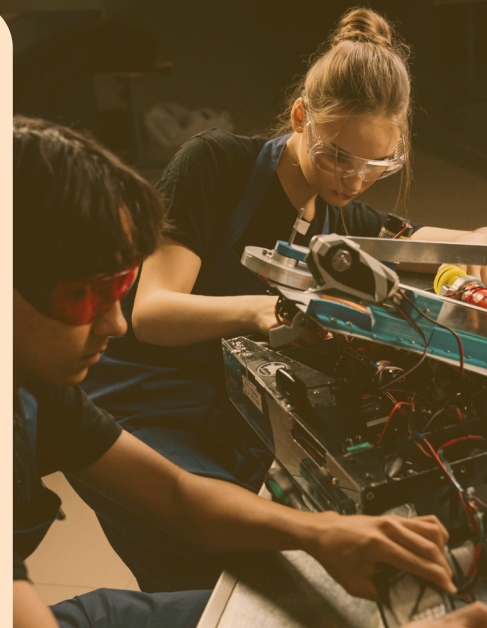
The Open Source Community in robotics emerged in the early 2000s as a response to the high cost and proprietary nature of robotics technology. The development of the Robot Operating System (ROS) by Willow Garage in 2007 provided a flexible open source platform for building robotics software. ROS quickly became a popular tool in the robotics community, and many other open source platforms and tools for robotics were developed in the following years. Today, the open source community in robotics is a thriving collaborative movement that continues to push the boundaries of robotics technology while making it more accessible and affordable for everyone.

FORMULAS

SOFTWARE CODE AND DOCUMENTATION: This includes source code, API documentation, and user manuals for open source robotics platforms and tools such as ROS, Gazebo, and Arduino.

HARDWARE SCHEMATICS AND DESIGNS: Open source hardware designs for robotics, such as 3D models and blueprints for robots, can be considered data related to the Open Source Community in robotics.

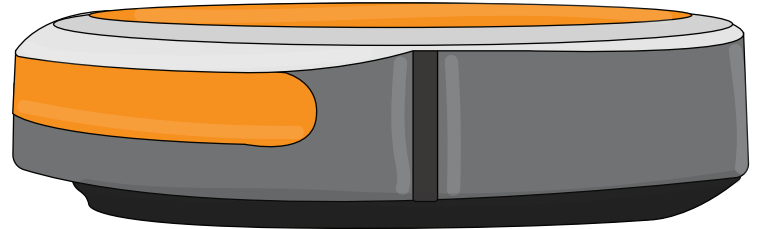
COLLABORATION AND DEVELOPMENT DATA: This includes data related to collaboration and development processes, such as issue tracking data, code review data, and version control data.



Make sure it measures up

APPLICATION

The TurtleBot platform is a low-cost mobile robot designed for research and education, built on top of the ROS platform. Its design and software are freely available for anyone to use and modify. The platform has been used in various applications, including the development of the Robot Operating System Navigation Stack, which provides robot navigation capabilities such as path planning and obstacle avoidance. It has been used in numerous robotics projects, including autonomous drones and self-driving cars.



TurtleBot

EXAMPLES

OPEN SOURCE SOFTWARE: This is the code that developers share and collaborate on to build robotic applications, platforms, and tools.

OPEN SOURCE HARDWARE: This includes schematics, blueprints, and 3D models that are freely available to anyone who wants to build a robot.

ONLINE COMMUNITIES AND FORUMS: These platforms provide a space for sharing ideas, asking and answering questions, and collaborating on projects.

KNOWLEDGE SHARING RESOURCES: These include tutorials, documentation, and educational materials to help people learn and develop skills in robotics.

COLLABORATIVE DEVELOPMENT TOOLS: These tools enable developers to work together on projects and include version control systems, issue trackers, and code review tools.



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