

Gauss6 A Six-axis ROS Arm

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RoboWare Studio



<https://github.com/TonyRobotics/RoboWare-Studio>

The screenshot shows the RoboWare Studio IDE interface. The main editor displays a C++ file named `map_subscriber.cpp` within a workspace named `catkin_ws`. The code includes ROS headers and defines a `subMapCallback` function and a `main` function. The left sidebar contains a 'Local' variable explorer showing variables like `__rosconsole_define_location__loc`, `width`, `height`, and `map`. The bottom-left pane shows a call stack with the current function `subMapCallback` at the top. The top toolbar includes standard IDE controls and a 'Single Step (F11)' button.

```
1 // 引入ros头文件，地图消息类
2 #include "ros/ros.h"
3 #include "nav_msgs/OccupancyGrid.h"
4
5 // 订阅回调函数，处理接收到的地图
6 void subMapCallback(const nav_msgs::OccupancyGrid& msg)
7 {
8     int width = msg.info.width;
9     int height = msg.info.height;
10    ROS_INFO("get map: width=%d", width);
11    ROS_INFO("get map: height=%d", height);
12}
13
14 int main(int argc, char *argv[]){
15     // 初始化ROS节点，创建节点句柄
16     ros::init(argc, argv, "map_subscriber");
17     ros::NodeHandle nh;
18     // 创建一个订阅者对象，订阅主题为"map"，消息队列大小为100
19     ros::Subscriber sub_map = nh.subscribe("/map", 100, subMapCallback);
20     // 运转ROS，即进入一个循环，监听消息
21     ros::spin();
22     return 0;
23 }
```

www.roboware.me

1. RoboWare Studio is an IDE for ROS development.

2. RoboWare Studio is built on Visual Studio Code (A free, open source, cross-platform IDE).

3. RoboWare Studio makes the ROS development visual, simple and manageable. It provides ROS workspace

Motivation

- A 6-axis arm is needed for training and education.
- It needs to be driven by ROS.
- There are several open arms online but some don't use ROS and some are not products.
- So, do one by ourselves for training and education.

Features

- Low cost
 - ✓ 3D Printable
 - ✓ Step motors with Integrated position sensors and drivers.
- Extremely suitable for training and education
 - Fully controlled by ROS packages, including MoveIt and ROS Controller.
 - IKFast and KDL are installed.
- Comprehensive software provided.

Gauss6-500 six-axis ROS robotic arm



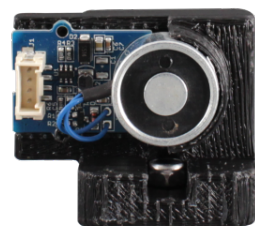
Gauss6-500 six-axis ROS robotic arm



吸盘



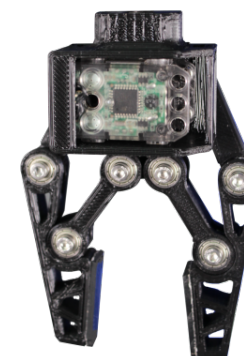
电磁铁



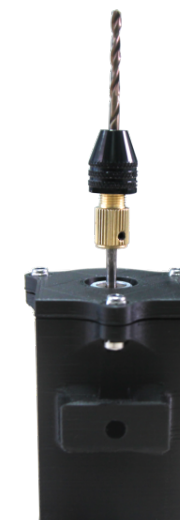
激光



电动夹子



直流电机



Tools

Studio Software

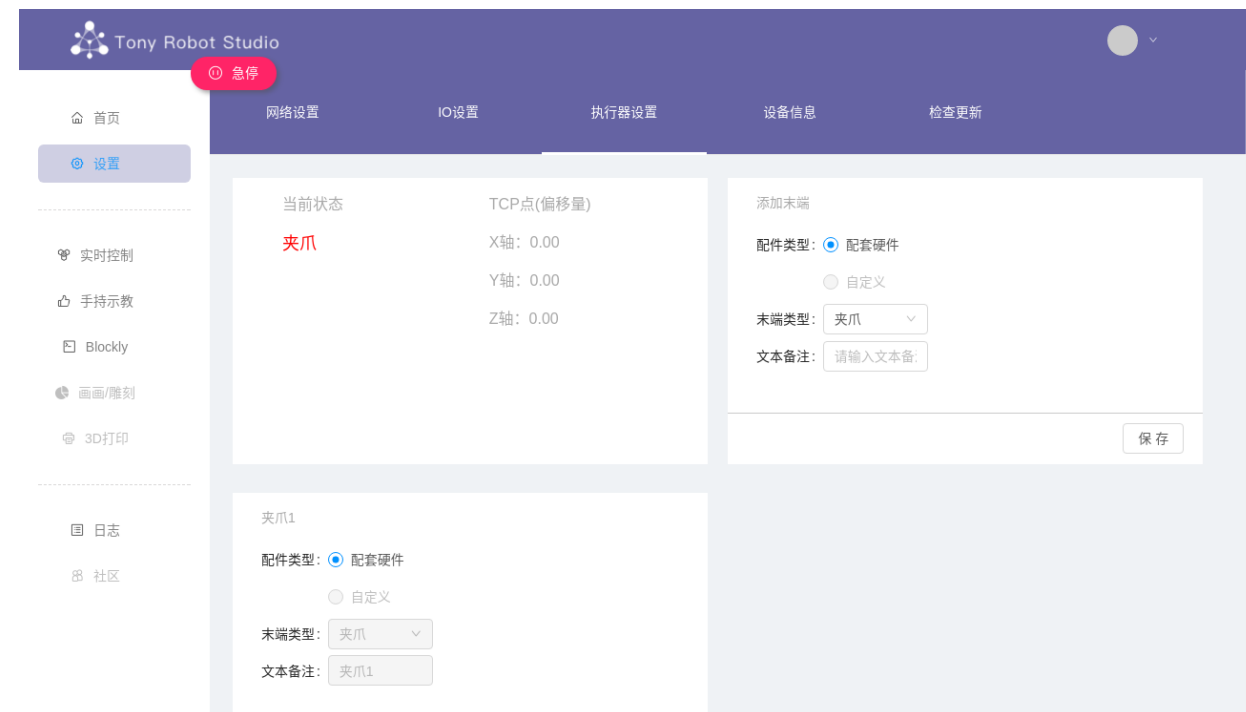


The screenshot shows the 'Status Monitoring' interface of Tony Robot Studio. The top bar includes a 'Tony Robot Studio' header and a '急停' (Emergency Stop) button. The left sidebar contains navigation options: '首页' (Home), '设置' (Settings), '实时控制' (Real-time Control), '手持示教' (Handheld Teaching), 'Blockly', '画画/雕刻' (Drawing/Cutting), '3D打印' (3D Printing), '日志' (Logs), and '社区' (Community).

The main content area is divided into several sections:

- 连接状态 (Connection Status):** Displays 'WIFI模式' (WIFI Mode) and connection details for the '桌面机械臂Gauss' (Desktop Arm Gauss), including IP address (192.168.0.132:9090) and firmware version (1.0.3.A). It also shows the calibration status as '尚未校准' (Not calibrated).
- 连接设置 (Connection Settings):** Includes a '热点模式' (Hotspot Mode) tab and a list of instructions for connecting the robot arm. A '连接' (Connect) button is present.
- 电机状态信息 (Motor Status Information):** A table showing the status of six motors (J1-J6) and a temperature sensor (T1).
- 关节坐标系 (Joint Coordinate System):** A table showing the position of five joints in degrees.
- 直角坐标系 (Cartesian Coordinate System):** A table showing the position of the end effector in mm and degrees.
- 日志 (Logs):** A section for viewing system logs, showing a successful calibration event on 2018-09-30.

Status Monitoring



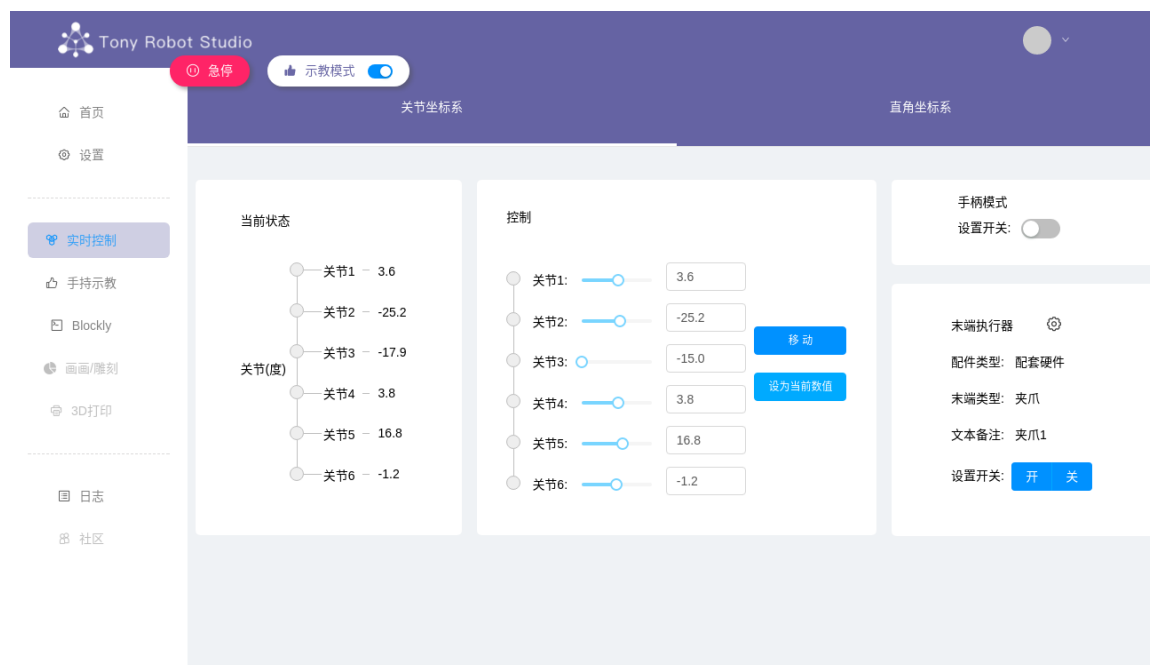
The screenshot shows the 'Configuration' interface of Tony Robot Studio. The top bar includes a 'Tony Robot Studio' header and a '急停' (Emergency Stop) button. The left sidebar is identical to the Status Monitoring interface.

The main content area is divided into several sections:

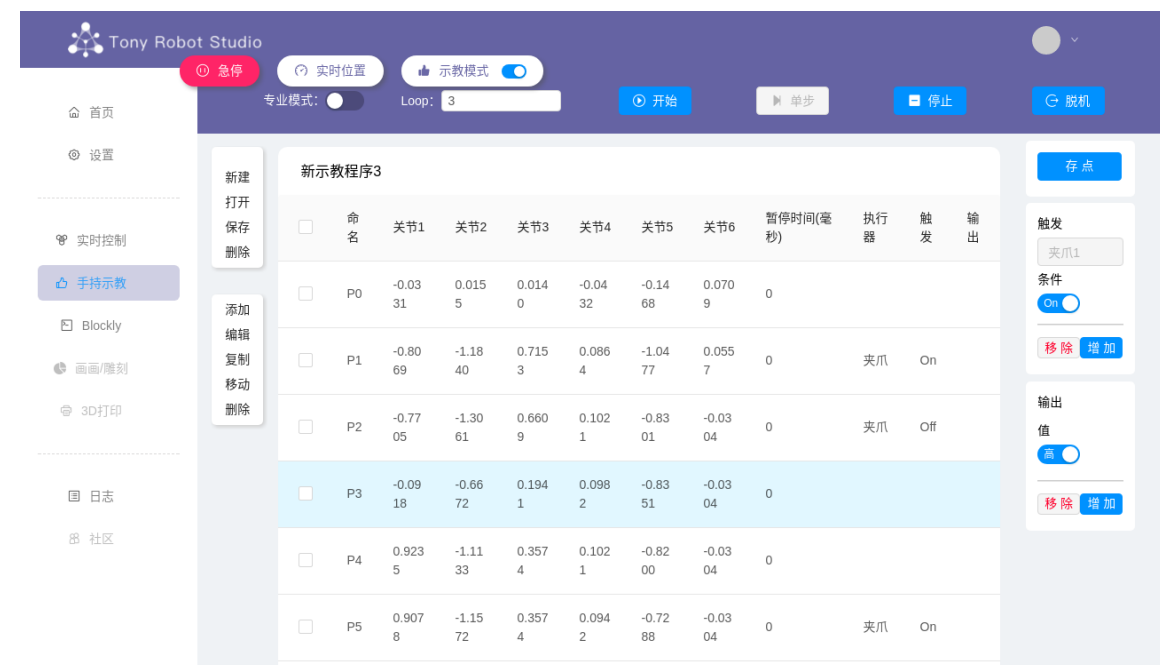
- 网络设置 (Network Settings):** A tab for configuring network settings.
- IO设置 (IO Settings):** A tab for configuring IO settings.
- 执行器设置 (Actuator Settings):** A tab for configuring actuators.
- 设备信息 (Device Information):** A tab for viewing device information.
- 检查更新 (Check for Updates):** A button to check for software updates.
- 当前状态 (Current Status):** Displays the current status of the robot arm as '夹爪' (Gripper) and the TCP point (offset) coordinates (X, Y, Z).
- 添加末端 (Add End Effector):** A section for adding a new end effector, including a dropdown for '末端类型' (End Effector Type) and a text input for '文本备注' (Text Remark).
- 夹爪1 (Gripper 1):** A section for configuring the gripper, including a dropdown for '末端类型' (End Effector Type) and a text input for '文本备注' (Text Remark).

Configuration

Studio Software

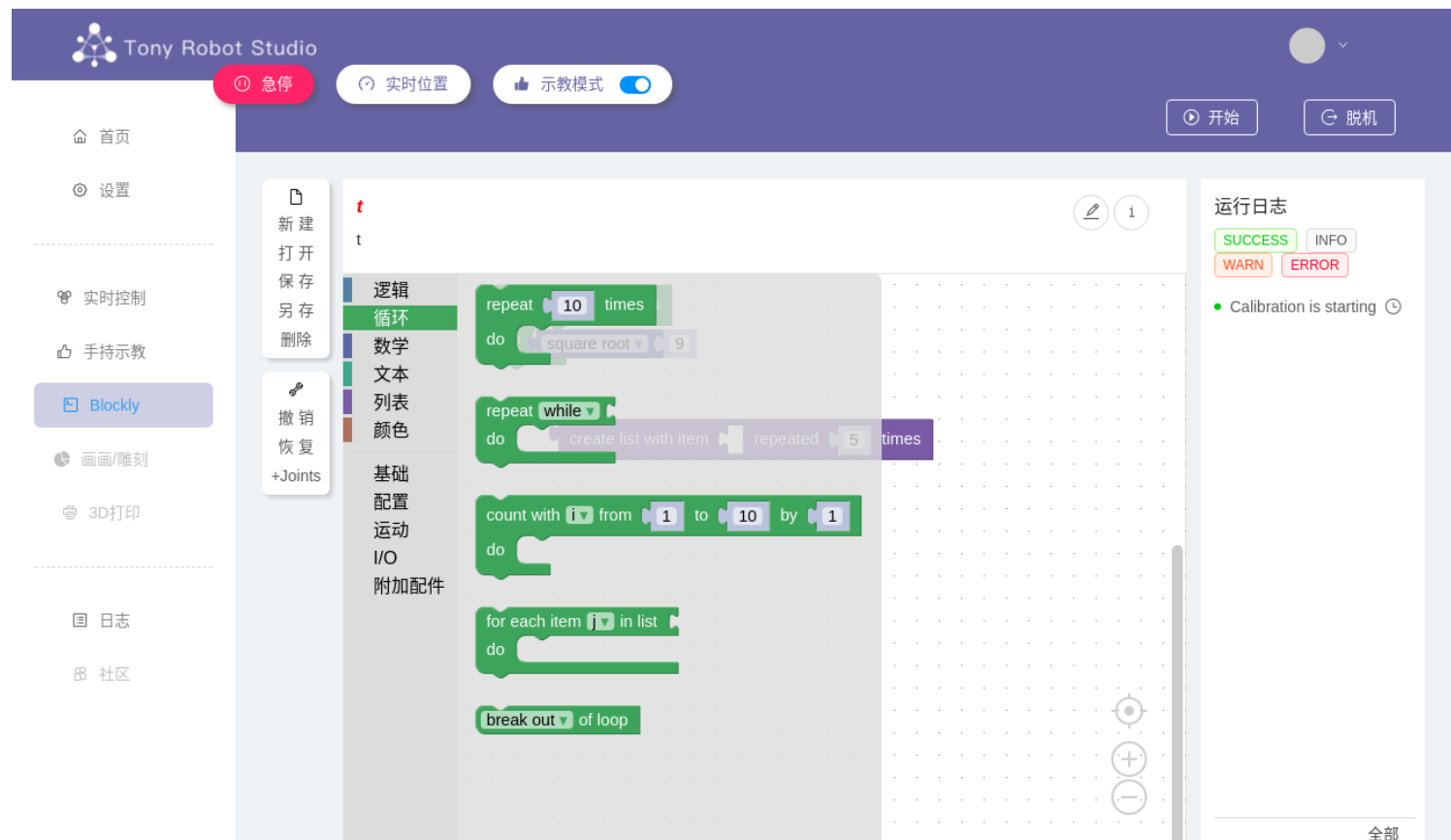


Remote Control



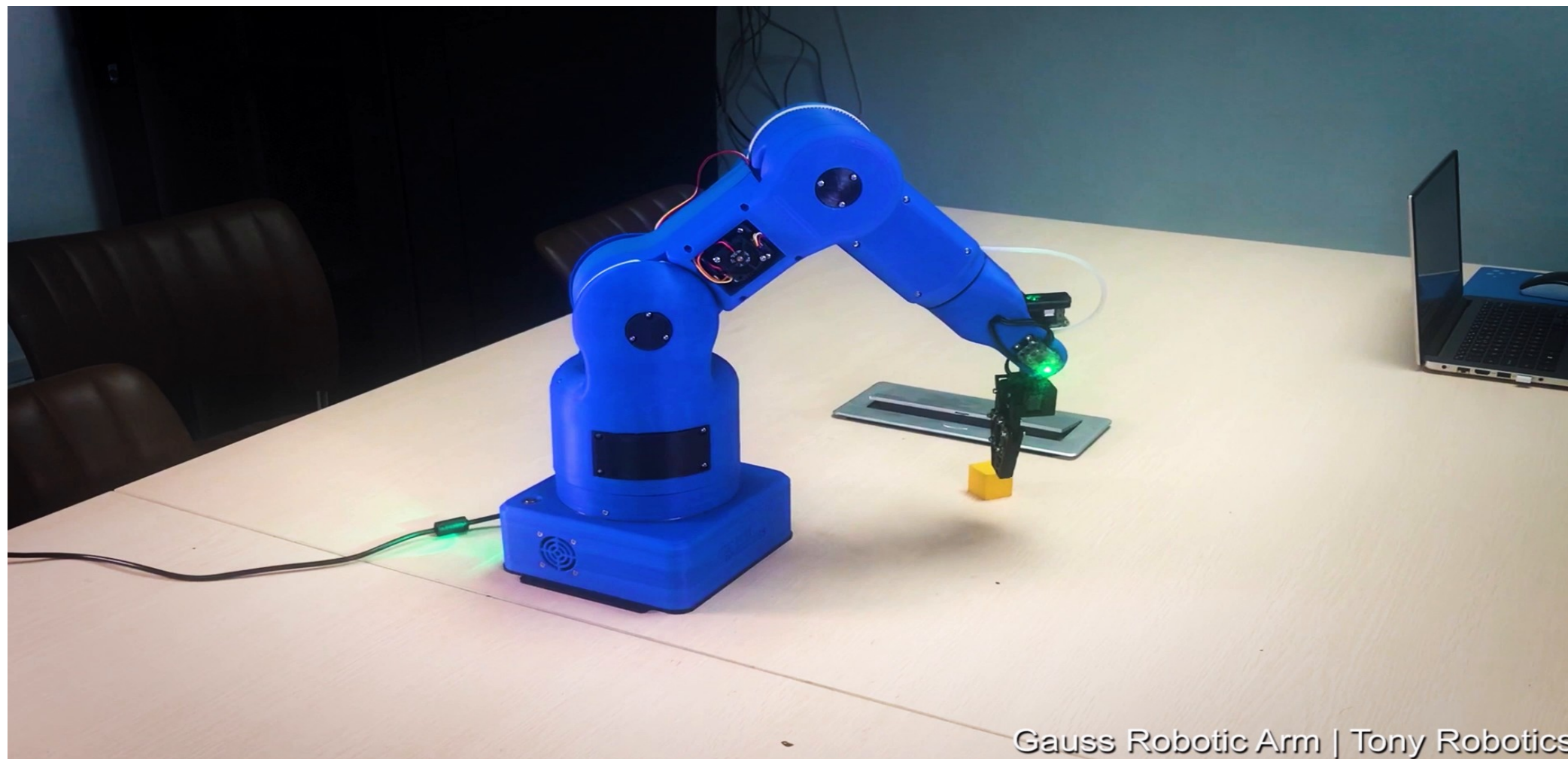
Teach and Play

Studio Software



Blockly

Video



Gauss Robotic Arm | Tony Robotics

We'll start to sell Gauss6 by the end of
this year.

THANK YOU!

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