

AI Notes from the March 18th, 2025 Robot Builder's Night - Virtual

Announcements and Welcome:

Paul Bouchier welcomed attendees and announced the **monthly meeting on Saturday about ROS 2 navigation and LinoRobot 2**.

He mentioned a robot power lunch in the DFW area.

He called for volunteers to help VEX Robotics teams practice presentations.

Mike Williamson's Robot Presentation:

Mike Williamson presented his robot project.

He shared his public **GitHub repository**: github.com/mikew123.

He detailed the hardware design, electronics, and software components.

He discussed **challenges with Wi-Fi connectivity and issues with transforms and timestamping in RViz**.

Paul Bouchier's LinoRobot Demonstration and ROS Discussion:

Paul Bouchier demonstrated his modified **LinoRobot** navigating a hallway using **ROS 2 navigation**, including obstacle avoidance.

He encountered issues with localization.

There was a discussion about **time synchronization in ROS**, prompted by Chris N, regarding potential causes for such issues between the robot and the control laptop, especially when using **micro-ROS** on the ESP32.

Mike Williamson shared a link related to micro-ROS:

https://github.com/micro-ROS/micro_ros_stm32cubemx_utils/issues/131.

Fernando's Swerve Drive and 3D Printer:

Fernando presented his new **swerve drive implementation with two pods** and discussed future improvements, including detecting steering slippage.

He reported that his **Ender3 printer** was working again and showed its web interface.

Doug P.'s Table-Bot and Robie's Head:

Doug P. showed his populated **PCB boards for the table-bot robot.**

Discussions covered putting **Robie's head back together** and considering an ESP32 cam for face recognition.

Camera and Object Detection Discussions:

The group discussed the **OpenMV Kickstarter camera** that Pat Caron mentioned.

Ray Casler shared his experience with **Maxicam** for object detection.

Pat Caron's Lidar Code and Issues:

Pat Caron explained how he resolved a loop issue in his lidar code by using a thread.

He mentioned ongoing problems possibly related to power.

Battery Management System (BMS) Discussion:

Doug P. discussed powering his robot with **18650 batteries and a BMS.**

He shared an Amazon link for a BMS module: <https://www.amazon.com/dp/B0DSW75YXW?>

He also shared "**Google LX-LISC-V2 for better descriptions**".

Paul Bouchier later shared a link to a datasheet for the INJOINIC IP2326 chip:

https://www.lcsc.com/datasheet/lcsc_datasheet_2304062030_INJOINIC-IP2326_C2832094.pdf.

Paul also shared the Amazon page for his LD19 lidar.

Science Fair Robot Projects:

Tom Crawford highlighted impressive **autonomous robot projects with AI** from recent science fairs.

RoboRama Announcement:

Pat Caron announced **RoboRama**, a robotics event he is organizing for May 24th.