Robot Builders Night Virtual for December 9th, 2025

https://youtu.be/bSdMtjTFe1M?si=eOptkWyrdKVjsinn

Key Discussion Points

Meeting Logistics

- **December Events Discussion**: Pat Caron opened the meeting with plans for December events, proposing discussions on future meetings for December 23rd and the 27th.

Presentations

Outdoor Robot Lidar Project by Ray Casler

- **Lidar Systems Setup**: Ray discussed the challenges of using lidar systems on outdoor robots, specifically dealing with different versions and libraries for lidar hardware, such as version one and two lidar models.
- **PWM Mode & Interrupts**: Implementation of PWM mode to measure distances accurately, using processor interrupts.
- **Challenges**: Difficulty in synchronizing older and newer lidar models, issues with reading discrepancies, and addressing echo challenges during demos.

Mini Sumo Robot by Mike Williamson

- **Design Overview**: Mike shared insights into building a mini sumo robot, including CAD designs and sensor placements.
- **Weight Management**: Discussion on strategies to add weight for traction and stability, including using pennies.
- **Sensor Challenges**: Analysis of sensor efficiency against black and reflective surfaces, with plans to integrate more advanced sensors such as BL53 L5s for better detection accuracy.
- **Presentation & Live Demo**: Mike provided a live demonstration of the robot's functionalities, explaining state machine logic for combat situations in sumo competitions.

Technical Discussions

- **Brushless Motors**: Doug Paradis and Ponder SomeMore discussed the potential use of Neos 2 brushless motors and the requirements of suitable motor controllers.

- **CNC Machines**: Insights were shared regarding different CNC machines available, including entry-level options suited for home use and price considerations with ongoing sales.

Conclusions and Insights

- **Technical Challenges & Solutions**: The meeting highlighted the importance of resolving integration issues between different hardware generations and the value of community insights in advancing robotics projects.
- **Engagement and Innovation**: Presenters emphasized innovation in robotic solutions, including optimizing sensor setups and leveraging programmable IO for improved hardware efficiency.

Referenced Links

- **Mike Williamson's GitHub Repository**: ms26 Project
- **Ed Mart's YouTube Link**: Project Video
- **Ponder SomeMore's DPRG Shirt Link**: Moon Day 2025 DPRG Shirt

The meeting was concluded with communal discussions about hardware purchases and holiday plans, offering members insights into upcoming deals and potential project enhancements.