Matthew Bingham

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Education

Bachelor's degree in Computer Engineering
Mississippi State University - Starkville, MS, GPA: 3.50/4.00
Graduating Dec. 2024
Associate in Arts (AA)
Pearl River Community College - Picayune, MS
Graduated May 2022

Projects

FNDR DFNDR *Jan 2023 - May 2023*

- Collaboratively engineered an innovative proximity sensor system for garage parking. This advanced system utilizes precise distance measurement technology to guide drivers by indicating the optimal parking distance from the wall.
- Designed and developed real-time distance detection algorithm to accurately gauge vehicle-wall proximity with an intuitive LED-based feedback mechanism, providing clear visual cues for drivers to adjust vehicle positioning.
- Employed rigorous testing methods to ensure system reliability and accuracy under diverse parking conditions.

Ultrasonic Squatting Depth Sensor *Jun 2023 - Aug 2023*

- Independently conceptualized and developed a barbell clip device aimed at enhancing squat training efficiency by alerting the user when optimal depth is reached.
- Engineered a motion-sensing mechanism that accurately detects the squat depth, ensuring precise feedback for each rep.
- Integrated a user-friendly alert system that notifies the user via a subtle signal, facilitating concentration and form maintenance during exercise.

Nerf Quadruped Robot School Project *Aug 2023 - Nov 2023*

- Engineered a specialized control system to integrate a Nerf gun with a Unitree GO1 quadruped robot, achieving automated aiming and firing.
- Implemented object recognition algorithms to identify and track human targets, optimizing robot positioning for accurate shooting.
- Utilized electromagnetic solenoids for triggering the Nerf gun, controlled through serial port communication.

Skills

- C++ - *4 years*
- Python - *2 years*
- MATLAB - *2 years*
- Assembly - *1 year*
- Verilog - *2 years*
- Linux - *2 years*
- Virtualization - *1 year*
- ROS - *1 year*
- FPGA - *2 years*
- Electrical design - *2 years*
- Microsoft Office - *7 years*
- Data structures - *1 year*
- Arduino - *2 years*
- Debugging - *4 years*
- Soldering - *3 years*
- Vivado - *1 year*