Presentation Code (GitHub)

# GitHub

GitHub Link:

<https://github.com/sebguarna01/41014_GroupProject>

The **GitHub contains** documents and folders for:

* Final Code and Demo
  + Calibration
  + Code
  + Demo Video
* Project Teaser Presentation
* DoBot Movement Testing (simulations)
* Group Project Details (resource from Canvas)
* Group Project (resource from Canvas)
* README

# Individual Contribution:

The project team collaborated on the *Project Code*  tasks equally. We made sure to communicate project needs and distribute tasks equally and fairly.

# README

# DoBot Robot Hand-Eye Calibration Project

<!-- ABOUT THE PROJECT -->

## About The Project

Project Link: https://github.com/sebguarna01/41014\_GroupProject

\*\*Group Project Task 4:\*\* "This project aims to calibrate the relative pose between camera end effector, pattern-end effector or robot base-global RGB-D sensor" Zhao, L. (2023).

The DoBot Robot Hand-Eye Calibration project is a significant endeavor in the realm of robotics, aiming to bridge the gap between perception and action by achieving precise hand-eye calibration on the DoBot Magician robot. This calibration is vital for enhancing the robot's performance in various applications, from control and object recognition to navigation. The project's scope encompasses understanding the mathematical principles of calibration techniques, integrating sensor data, and developing software solutions to achieve optimal calibration. The DoBot Robot Hand-Eye Calibration project aims to achieve precise calibration between the pattern-end effector and a mounted camera, enhancing accuracy and performance in various applications.

### Project Requirements

\* Move DoBot Magician Robot

\* Capture Images

\* Perform Camera Calibration

### Project Methodology

\* \*\*Extensive Research\*\*: Investigated calibration techniques and project requirements.

\* \*\*Simulation\*\*: Simulated robot movements to determine poses for calibration

\* \*\*Data Collection\*\*:

\* Installation

\* Checkerboard Mounting

\* Sensor Placement

\* DoBot Movement

\* \*\*Calibration Process\*\*: Implemented detailed calibration methodology based on research findings.

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<!-- GETTING STARTED -->

## Getting Started

This sections runs through the project prerequisites:

### Necessary Skills

\* MATLAB

\* ROS

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<!-- CONTRIBUTORS -->

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<!-- Table of References -->

## References

\* Leading Manufacturer of Collaborative Robots. (n.d.). DoBot. https://www.dobot-robots.com/

\* Paul, G. (2021, March 30). dobot\_magician\_driver. GitHub. https://github.com/gapaul/dobot\_magician\_driver

\* Zhao, L. (2023). 41014 Group Project Details Spring 2023. Canvas. https://canvas.uts.edu.au/courses/28447/files/5508799?module\_item\_id=1497907

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