



Cover page

Project title: Sudoku Solver

Academic Year: summer 2023

Group Members: Yacoub assi

Department Name: Computer engineering

Mohammad Masood

Project Type **Hardware**

Supervisor Name : Syfyan samara

Format:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

Abstract Body:

Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**



Project's Abstract:

This project showcases a Sudoku solver that combines image processing and robotic manipulation to automate the process of solving Sudoku puzzles. By utilizing a camera connected to a Raspberry Pi, the system captures an image of a Sudoku board, extracts the numbers and their positions from the image, and employs an algorithm to solve the puzzle. A robotic arm equipped with a pen attachment then fills in the solved numbers on the physical board. This integration of image processing, robotics, and algorithmic solving demonstrates the potential of combining technologies to automate complex puzzle-solving tasks.

Importance of the Project:

This project holds significant importance as it addresses the automation of Sudoku puzzle solving, a task that traditionally requires human intervention. By leveraging image processing and robotics, the project streamlines the process, offering efficiency, accuracy, and convenience. The automation of puzzle solving not only enhances productivity but also showcases the potential of combining different technologies to solve real-world problems.