

# Overhead Crane Positioning System

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**Abstract:** In this project an overhead crane positioning system is build. Overhead crane systems are used for material transportation in many industries. Overhead crane works as a robot at many places such as workshops and industry to transport all kinds of goods. It is desired for the overhead crane to transport its payloads to the required position as fast and as accurately as possible without collision with other equipment's. In order to attain little swing angles, and additionally to include the potential uncertainty property of the system, a strong controller is needed to be developed.

**Keywords:** crane, crane position, app.

## 1. Introduction

Overhead crane positioning system is an overall system developed for controlling cranes in industries for shifting of goods. The overhead crane positioning system that we developed was built using VB.net and Android Platforms. First and foremost, the training data is provided to the machine. This is the step where the machine learns the observations of the information or the data provided by the system which is obtained through examples, direct experience, or instruction, in order to look for operations in data and make better decisions in the future based on the examples that we provide. The primary focus is to allow the system to work and learn independently without any intervention of humans and then take actions accordingly to adjust the different functioning. The primary concept of the project is to focus on the information which will be obtained by processing of the crane functions or datasets that are made available from the data master. The sensor that is used for the purpose of our project is Barcode Sticker Scanner. The images on the surface are captured by the sensor which takes high resolution images. The high-resolution images are being provided by the high-resolution printer, from the main center. The programming part is done by using .Net and Android language and various other software and libraries.

## 2. Objective

The objective of this project is to develop featured system that can minimize the work by making the crane operation through mobile. The system must work according to the operation given. The system must learn and improve every time in terms of accuracy from the previous experiences and training sets being provided.

## 3. Literature survey

Cranes are largely used for transportation of heavy loaded material in factories, warehouse, shipping yards and construction purposes. In order to elevate huge weights in factories, in construction, in industries, on ships, etc., cranes typically have terribly robust structures. Generally responding to commanded motion with oscillations of the payload and hook. The swaying development introduce not solely scale back the capability of Grubs, however conjointly cause safety drawback within the sophisticated operating place. Previously, all the cranes were manually operated. But manual operation became troublesome once cranes became quicker and better [1]. Due to this, economical controller's area unit applied to the cranes system to ensure quick flip over time and to fulfill safety demand. Crane device with the trendy innovation within the wireless industrial systems several applications area unit designed by the well-known makers so as to boost the protection of the operators and improve the productivity [2]. The modern crane management utilized in the commercial sectors greatly improves job website safety by providing the operator the safest advantage purpose for effective control of Grubs. This is a one-man control remote system that avoids the need of any second person stabilizing the load while guiding its placements. While mishandling the system the operator has the coincidental Management to maneuver round the work space whereas setting the load exactly into position. The Electrical or Hydraulic crane management wireless remote management apply the newest innovation within the trendy remote control technology [3].

The system greatly reduces all kinds of risks throughout the operation. It addition provides good level of security whereas mistreatment for the massive cranes. The button area unit usually nominal by the client solely this is often a single control remote system that eliminates the requirement of any person helpful the load while guiding its placements. "Design analysis and improvement of EOT crane", analyses the crane wheel for optimum size. Using a optimization tool, the optimization of the crane wheel size is carried out [4]. "3D Modeling and finite element analysis of EOT crane" made a comparison between the analytical calculations and FE analysis. As results of study they need planned the planning optimization methodology for overhead crane [5].

Patil P. and Nirav K. in "Design and analysis of major elements of 120T capability of EOT crane" analyzed varied elements of

crane like wheels, pulleys, rope drum and girder [6]. They have done the manual calculations mistreatment Indian standards and on the idea of those calculations 3D modeling and analysis has been applied. For modeling they need used Cero code and ANSYS as analysis code [7].

#### 4. Proposed system

The Proposed system will work collaborating with the SQL server database and would fetch data from the database in generating reports and performing the calculations. The android app would be used industrially for scanning, feeding inputs and manipulating data. The android application will also be used for manually controlling the cranes. The windows applications will be used for generating reports on the dashboard and to provide another way for controlling the cranes in case of emergency.

#### 5. Output

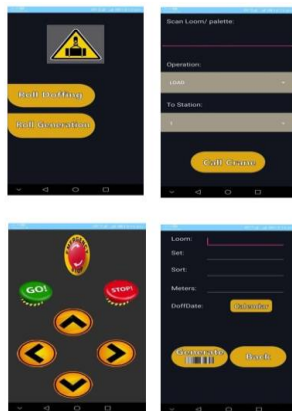


Fig. 1. Output

#### 6. Conclusion

In this project we have worked upon the designing phase of

overhead cranes controlling software and application, we studied about types of overhead cranes, basic components of cranes and how we can operate the crane using android application and windows application. Our project “Overhead Crane Positioning System”, by using android application the user can operate and can simultaneously do other work. It is easily. accessible and reliable as Cranes are widely used in industries and at construction sites. And because it is wirelessly controlled it has a good scope ahead at little scale and at giant scale, as a result it replaces the half of the PLC controller by our module. Which save the cost of PLC controller and wiring cost. Here the conclusion we find is, projects can be developed at efficient costs.

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