FUZZY BASED INTELLIGENT CONTROL SYSTEM FOR ELEVATOR

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ABSTRACT

This paper presents the idea to make elevator more efficient for user. This project call video based intelligent control system in elevator. This idea use video based intelligent control system to control the elevator at all time and fuzzy logic based expert system for controlling signal at an intersection. The video can monitor and capture picture at all level then send to system to control the elevator. Both are using MATLAB toolboxes for image acquisition, image processing and fuzzy logic. In this paper only focus on the rule base fuzzy logic. The main objective for this idea is to help people to minimize the waiting time for waiting elevator and also to find solution for efficient dispatch system. It contains of two system monitory it from the key dispatching and video camera. To make it intelligent, fuzzy logic in the MATLAB is use to create rule for this system. By developing the video based intelligent control system for elevator, the time for waiting elevator can be minimize. The result obtained from fuzzy logic simulation

Index Terms- elevator, video based intelligent control system using camera, camera, elevator control system, fuzzy logic

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CHAPTER 1

INTRODUCTION

Now today there are many building is build in high rising because of the space and trend. Elevators are indispensable high rising buildings because of large number of floors and busy traffic. In a tall building with multiple elevators, it is a notoriously difficult task to control the elevators in the most efficient manner. In general, the objectives of elevator control systems differ from building to building; the most common goals are to minimize passengers' average waiting time, to minimize average riding time, and to balance crowding in elevators. Optimizing an elevator group control system to achieve these objectives is difficult for various reasons, including the following [22]: coordination of multiple cars, constraints on elevators' movements, incomplete information (e.g., after a button is pressed at a floor, it is impossible to know how many passengers are waiting at that floor), unknown passenger traffic patterns, and the existence of special-purpose elevators or floors [24]. In order to deal with these difficulties, conventional elevator group control systems have used fuzzy systems [12], [15], [17], [18] artificial neural networks [19], [14], [16], [23], genetic algorithms [20], [21], [24], etc.

Passenger traffic is conventionally classified into the following four patterns [13], [22], [23]: 1) uppeak traffic most passengers move up from the first floor and downward movements are rare (mostly in the early morning); 2) downpeak traffic most passengers move down to the first floor and upward movements are rare (mostly in the evening); 3) lunchtime traffic many passengers move up from and down to the first floor; and 4) interfloor traffic passengers move up and down freely among several different floors with few specific patterns. Some studies have fully or partially focused on uppeak traffic patterns [13], [19], [22] or on lunchtime traffic patterns [15]. Other researchers [17], [21] have proposed adaptation techniques for dynamic flows, which prepare a set of prespecified traffic patterns in advance and switch between policies appropriate for the specific patterns.