

A Review Based on Navigation Using Audio and Video Based Embedded System

N. Dhanushree¹, S. Harshitha², B. Shiva Kumar³, D. Srinivas⁴, Anupama Hongal⁵

^{1,2,3,4}UG Student, Department of Electronics and Communication Engineering, Sambhram Institute of Technology, Bangalore, India

⁵Assistant Professor, Department of Electronics and Communication Engineering, Sambhram Institute of Technology, Bangalore, India

Abstract: In this modern world everything becomes computerized. The need of human in various scenarios has been eliminated by a machines. This leads to evolve an idea to propose a project, where the human interaction is fully eliminated. In the proposed concept campus navigating device plays a vital role to eliminate the need of human interaction. The proposed idea through this project is to make the people locate their destination on their own through smart phones across all the campus in the cities. In order to make the navigating process easier. The added advantages is the elimination of usage of time.

Keywords: Embedded system.

1. Introduction

Navigation is a technique which basically focuses on process of monitoring and controlling the movement of person or vehicle from one place to another e.g.: Land navigation, Marine Navigation, Aeronautic Navigation etc. Our proposed campus navigator is the android mobile application which is basically used for navigating routes inside any campus premises e.g.: Mall, College, Hospital etc... Mobile phones are nowadays far more than merely devices to communicate with. accelerometer, that can used to determine the orientation of the device, location-based applications coupled with augmented reality views are also possible. There are several commercial navigation applications - such as Google Maps, Yahoo Maps and Map quest that provide users with directions from one place to another. However, these applications must search along existing roads. They are not able to provide routes that are as precise as an on-campus path would require. The proposal is more suited for campus environment of manufacture industries, software companies, universities and government campus etc. Often a person rather uses a phone app to look up a place of interest rather than asking others for direction. In such cases, a voice-based navigation system would be desirable Speech recognition is the process of converting a speech signal to a sequence of words by the means of an algorithm implemented as a computer program. As speech is considered the most natural and easy form of communication it also makes the proposal more user friendly.

2. Literature survey

Indoor Navigation With Foot-Mounted Strap down Inertial Navigation and Magnetic Sensors suggested by BIRD Jeff (Defense R & D Canada), ARDEN Dale (Dale Arden Consulting) [1] has described a method of navigation for an individual based on traditional inertial navigation system (INS) technology, but with very small and self-contained sensor systems. A conventional INS contains quite accurate, but large and heavy, gyroscopes and accelerometers, and converts the sensed rotations and accelerations into position displacements through an algorithm known as a strap down navigator. They also, almost without exception, use an error compensation scheme such as a Kalman filter to reduce the error growth in the initially sensed motion through the use of additional position and velocity data from GPS receivers, other velocity sensors (e.g., air, water, and ground speed), and heading aids such as a magnetic compass. This technology has been successfully used for decades, yet the size, weight, and power requirements of sufficiently accurate inertial systems and velocity sensors have prevented their adoption for personal navigation systems. Now however, as described in this article, miniature inertial measurement units (IMUs) as light as a few grams are available. When placed on the foot to exploit the brief periods of zero velocity when the foot strikes the ground (obviating the need for additional velocity measurement sensors), these IMUs allow the realization of a conventional Kalman-filter-based aided strap down inertial navigation system in a device no larger or heavier than a box of matches. A particular advantage of this approach is that no stride modelling is involved with its inherent reliance on the estimation of a forward distance travelled on every step the technique works equally well for any foot motion, something especially critical for soldiers and first responders. Also described is a technique to exploit magnetic sensor orientation data even indoor environments where local disturbances in the Earth's magnetic field are significant. By carefully comparing INS derived and magnetically derived heading and orientation, a system can automatically determine when sensed magnetic heading is accurate.

Navigation Domain Representation for Interactive Multi

view Imaging suggested by Thomas Maugey, Ismael Daribo, Gene Cheung, and Pascal Frossard [4] Enabling users to interactively navigate through different viewpoints of a static scene is a new interesting functionality in 3D streaming systems. While it opens exciting perspectives toward rich multimedia applications, it requires the design of novel representations and coding techniques to solve the new challenges imposed by the interactive navigation. In particular, the encoder must prepare a priori a compressed media stream that is flexible enough to enable the free selection of multi view navigation paths by different streaming media clients. Interactivity clearly brings new design constraints: the encoder is unaware of the exact decoding process, while the decoder has to reconstruct information from incomplete subsets of data since the server generally cannot transmit images for all possible viewpoints due to resource constraints. In this paper, we propose a novel multi view data representation that permits us to satisfy bandwidth and storage constraints in an interactive multi view streaming system. In particular, we partition the multi view navigation domain into segments, each of which is described by a reference image (color and depth data) and some auxiliary information. The auxiliary information enables the client to recreate any viewpoint in the navigation segment via view synthesis. The decoder is then able to navigate freely in the segment without further data request to the server; it requests additional data only when it moves to a different segment. We discuss the benefits of this novel representation in interactive navigation systems and further propose a method to optimize the partitioning of the navigation domain into independent segments, under bandwidth and storage constraints. Experimental results confirm the potential of the proposed representation; namely, our system leads to similar compression performance as classical inter-view coding, while it provides the high level of flexibility that is required for interactive streaming. Because of these unique properties, our new framework represents a promising solution for 3D data representation in novel interactive multimedia services.

In-Car Positioning and Navigation Technologies suggested by Isaac Skog and Peter Handel [3]. In-car positioning and navigation has been a killer application for Global Positioning System (GPS) receivers, and a variety of electronics for consumers and professionals have been launched on a large scale. Positioning technologies based on stand-alone GPS receivers are vulnerable and, thus, have to be supported by additional information sources to obtain the desired accuracy, integrity, availability, and continuity of service. A survey of the information sources and information fusion technologies used in current in-car navigation systems is presented. The pros and cons of the four commonly used information sources, namely, 1) receivers for radio-based positioning using satellites, 2) vehicle motion sensors, 3) vehicle models, and 4) digital map information, are described. Common filters to combine the information from the various sources are discussed. The expansion of the number of satellites and the number of satellite

systems, with their usage of available radio spectrum, is an enabler for further development, in combination with the rapid development of micro electro mechanical inertial sensors and refined digital maps.

An Event Driven Campus Navigation System (June -2017)
Authors: Akshay S. Pagare, Hitesh O. Pal This paper presents the event based campus navigation system that we are build an android application which helps to candidates/persons to navigate to an event which is being organized in a campus. This application is developed for all the colleges to enter their event details or college workshops or gatherings dates, timings and fees so that it can be viewable to all the students of different colleges and becomes an easy way to participate through this application. There is no such system to inform all existing as well as outside students, teachers and staff to inform about any event very quickly with its proper place, which may start few minutes or few hours later and the structure of fees. As a result there is a high opportunity to miss any valuable event. To reduce this pain inside a university campus, a very user friendly Google map based Event-driven campus navigation system on android platform has been designed, implemented and tested successfully in this work. This application provides route guide for users from his/her own location to desired location and event updates with its proper place.

In event based campus navigation system we are actually trying to build a system which helps us to navigate to an event which is being organized in a campus. This system works on a principle basis on android platform and virtual cloud computing. An event based campus navigation system also works on an idea of using web panel. The user in such a system can register for the event online basis. The registered users get the notification related to the event. Once they get the registration details they can take the decision and the system will help them to navigate to the system. The system works with a lot of accuracy and helps users to reach the exact location. Information events are held throughout the year and are a great way to find out where our favorite will be conducted in which college and peoples can participate and we are also providing facility by mobile application. we are developing web site for college admin and system admin and also application for mobile user. Mobile phones are nowadays far more than merely communication devices. In this college can also show his event list to student. we are implementing three user Admin, System and mobile client .and we are use java technology and android.

Campus Navigation on Android Platform (17 April 2013)
Authors: Vaibhav Anpat, Ashutosh Shewale, Yogesh Bhangale A University Campus may be very large it may have many campuses. Every year lots new student gets admitted in the university. Many new buildings are built, new courses are started and some department, canteen, library, etc. in the campus and how to find those places from current location. It creates problem to the new comer to reach easily and timely in the desired location. The new faculty number, staff and visitors also face same problem inside campus. Moreover, these does

not exist an efficient system to inform about any event which will happens just few minutes or a few hours later in the university campus with its proper location and shortest path from current location. Nowadays, most of the student, faculty member members and staff use android phone for personal purpose. A Global positioning system based on map application will be most helpful to locate desired place and shortest path from current location and to get update of event on map with its location. Thus it will reduce frustration and confusion of anybody inside the campus. This paper present the architecture and design of a Google map based application on android platform. The application has been implement using android SDK and has been tested for K J campuses.

3. Conclusion

Depending on the profile and time of the day information for students, visitors can be delivered. They can do a guided tour, without an actual guide. This design is very flexible and can be easily adopted for other systems with similar tasks for Example Smart City, Smart People. The project is designed using structured modeling and is able to provide the desired results. It can be successfully implemented as a Real Time system with certain modifications. Science is discovering or creating major breakthrough in various fields, and hence technology keeps changing from time to time. Going further, most of the units can be fabricated on a single along with microcontroller thus making the system compact thereby making the existing system more effective. To make the system applicable for real time

purposes components with greater range needs to be implemented. For project demo concern, we have developed a prototype module. In future, this project can be taken to the product level. To make this project as user friendly and durable, we need to make it compact and cost effective. Going further, most of the units can be embedded along with the controller on a single board with change in technology, thereby reducing the size of the system.

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