

Car Ignition Control By recognition Using SIFT Algorithm

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Abstract: — Car theft is big problem create in our country. To avoid this problem we are doing this project. In our project when person enter in car then capture the image and then compare those image with author person. If image match then car will start otherwise will not start. If other person tries to start the second time then an SMS will be sent author person mobile number. In our project use the sift algorithm, matlab, camera, DC motor, GSM, GPS, ARM7. For image matching and recognition, SIFT (scale invariant feature transform) features are extracted from a set of reference image and stored in a database. DC motor is used for the car engine. ARM7 can be used for GSM and GPS. Suppose car will be theft then will be using GPS find the car location. This project can be used for security purpose for schools, collages

Keywords: SIFT algorithm, GPS, GSM, ARM7

I. INTRODUCTION

Face recognition is an integral part of biometrics. In biometrics basic traits of human is matched to the existing data and depending on result of matching identification of a human being is traced. Facial features are extracted and implemented through algorithms which are efficient and some modifications are done to improve the existing algorithm models.

A face recognition system using the SIFT (Space invariant feature transformation) algorithm was implemented. The algorithm is based on Image features approach which represents a SIFT method in which a small set of significant features are used to describe the variation between face images. Experimental results for different numbers of faces are shown to verify the viability of the proposed method.

In this project an approach to the detection and identification of human faces is presented and then recognizes the person by comparing characteristics of the face to those of known individuals is described. And we introduced a new approach to get access by identifying the face only. If some other unauthorized tries to get access then it doesn't respond. This is to avoid the theft. Here we are representing through DC motor.

1. SIFT Algorithm

Scale Invariant Feature Transform

It is used for the converting the image in to data base as well as comparing the new image with old data base. For achieving image feature we have to follow four stages

2. ARM7

Arm7 is used as the main controller. It control the GPS, GSM, DC Motor interfacing. It has 64 wide pin configuration. As well as it can be programmed in varies was like jazell, assembly, thumb hence here it is used. The IC number of it is "LPS2148".

3. MAX 232

Max232 IC is a specialized circuit which makes standard voltages as required by RS232 standards. This IC provides best noise rejection and very reliable against discharges and short circuits. MAX232 IC chips are commonly referred to as line drivers. It is used for communicate with GPS and GSM.

4. DC MOTOR

The speed of a DC motor is directly proportional to the supply voltage, so if we reduce the supply voltage from 12 Volts to 6 Volts. It show the whole output of our project. That means when the whole project is correctly run then and then only it get started.

II. RELATED WORK

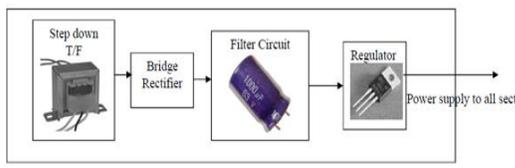
The same project in the microcontroller perform. The device is manufactured using Atmel's high-density nonvolatile memory technology and is compatible with the industry- standard 80C51 instruction set and pin out. The on-chip Flash allows the program memory to be reprogrammed in-system or by a conventional nonvolatile memory programmer. By combining a versatile 8-bit CPU with in-system programmable Flash on a monolithic chip, the Atmel AT89S52 is a powerful microcontroller which provides a highly-flexible and cost-effective solution to

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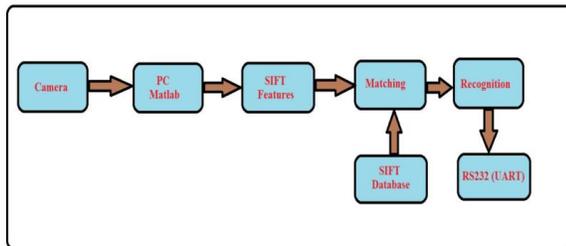
many embedded control applications. But in that project the GSM, GPS concept is present they do not introduce. Related no any paper or anything is not get.

III. METHODOLOGY

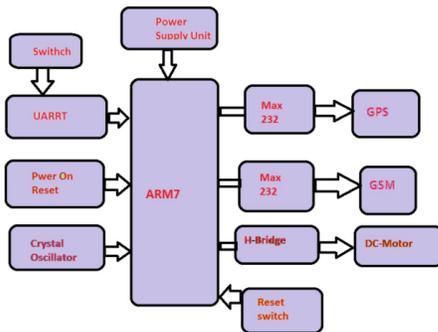
1. Power supply:



2. Software implementation



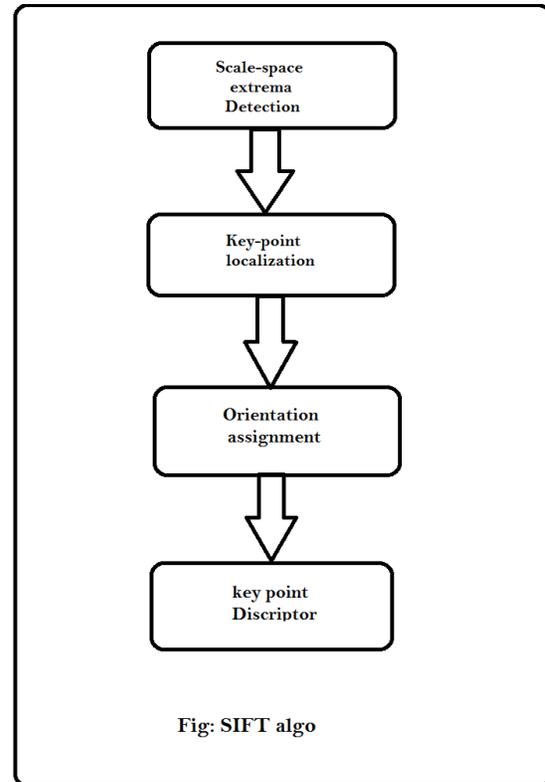
3. Project block diagram:



Sift

Scale Invariant Feature Transform

It is used for the converting the image in to data base as well as comparing the new image with old data base. For achieving image feature we have to follow four stages



In this above diagram the features of SIFT algorithm is described.

The 1st stage that is the scale-space extreme: In this feature search over all scales and image locations by using Gaussian function to identify potential interest point that are invariant to scale and orientation.

$$L(x,y,z) = G(x,y,z) * I(x,y)$$

... Where $G(x,y,z)$ = variable- scale Gaussian.

$I(x,y)$ = Input image.

In the 2nd stage that is Key point are selected based on measures of their stability. That means a detailed model is fit to determine location and scale. Keypoint are selected based on measures of their stability.

3rd stage that is the orientation assignment. One or more orientations are assigned to each key point location based on image gradient directions. All Future operation are performed on image data that has been transformed relative to the assigned orientation, scale, and location for each feature, thereby providing invariance to these transformations.

In the 4th stage that means the key point descriptor. The local image gradients are measured at the selected scale in the region around each key point. These are transformed

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into a representation that allows for significant levels of local shape distortion and change in illumination. This approach has been named the Scale Invariant Feature Transform (SIFT), as it transforms image data into scale-invariant coordinates relative to local features.

IV. SOFTWARE DESIGN

Software Required:

The software required for this project to develop is as following

Windows XP:

This is an Operating System (OS) on which all the software applications required for our project are going to be run. This OS is flexible to any user to operate and easy to understand. Accessing the software's and using them is very convenient to user.



OrCAD:

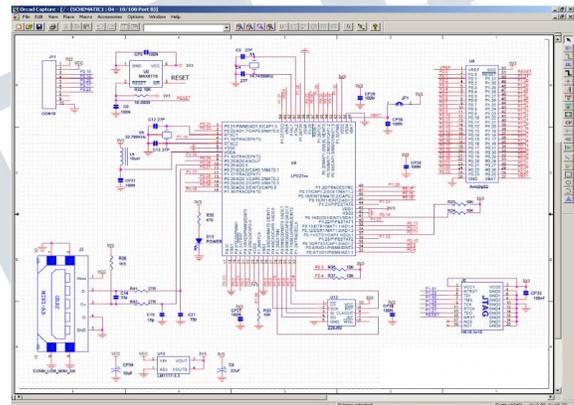
OrCAD is a proprietary software tool suite used primarily for electronic design automation. The software is used mainly to create electronic prints for manufacturing of printed circuit boards, by electronic design engineers and electronic technicians to manufacture electronic schematics.

The name OrCAD is a portmanteau, reflecting the software's origins: **O**regon + **CAD**.

The OrCAD product line is fully owned by Cadence Design Systems. The latest iteration has the ability to maintain a database of available integrated circuits. This database may be updated by the user by downloading packages from component manufacturers, such as Analog Devices or Texas Instruments. Another announcement was, that ST Micro electronics will offer Or CAD PSpice models for all the power and logic semiconductors, since PSpice is the most used circuit simulator. Intel offers reference PCBs designed with Cadence PCB Tools in the OrCAD Capture format for embedded and personal computers.

OrCAD Capture CIS is a software tool used for circuit schematic capture. It is part of the OrCAD circuit design suite.

Capture CIS is nearly identical to the similar OrCAD tool, Capture. The difference between the two tools comes in the addition of the component information system (CIS). The CIS links component information, such as printed circuit board package footprint data or simulation behavior data, with the circuit symbol in the schematic. When exported to other tools in the OrCAD design suite, the data stored in the CIS is also transferred to the other tool. Thus, when a design engineer exports a schematic to the circuit board layout utility, the majority of the circuit elements have footprints linked to them. This saves time for the design engineer.



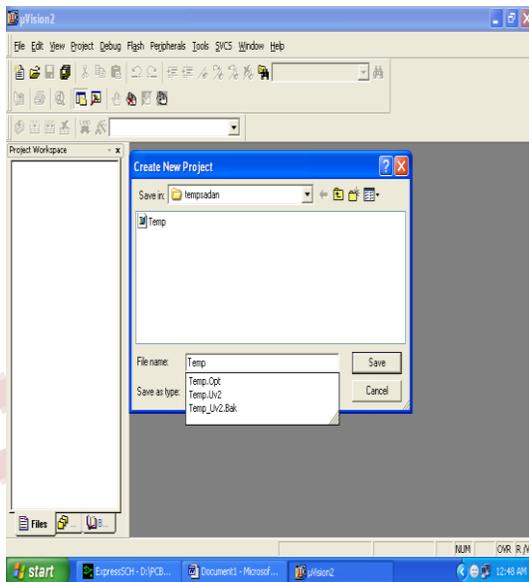
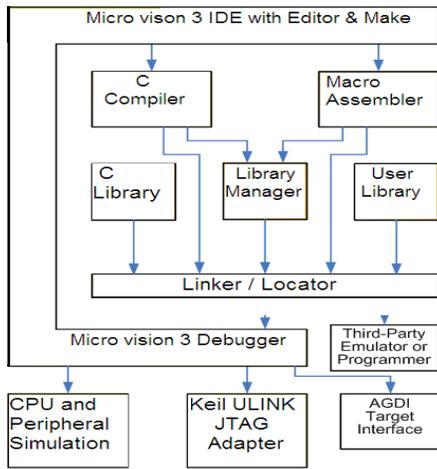
Software Development Cycle

When you use the Keil μ Vision3, the project development cycle is roughly the same as it is for any other software development project.

1. Create a project, select the target chip from the device database, and configure the tool settings.
2. Create source files in C or assembly.
3. Build your application with the project manager.
4. Correct errors in source files.
5. Test the linked application.

The following block diagram illustrates the complete μ Vision3/ARM software development cycle. Each component is described below

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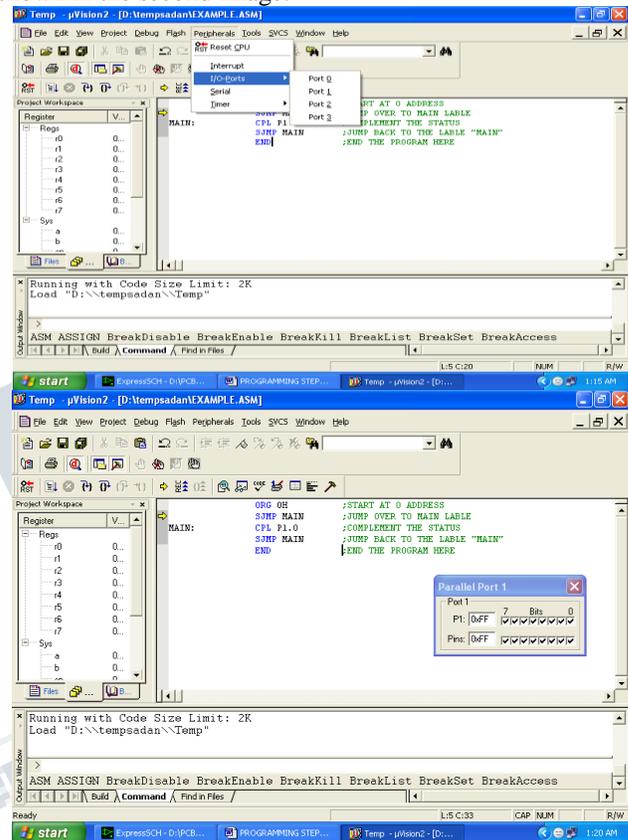
V.APPLICATION OF THIS SYSTEM

- Schools
- Collages
- Offices
- Institutions

VI. RESULT

Implemented System -

Whenever the program get run the motor get started as shown in the second image.



VII. CONCLUSION

SMS can be sent to the owner easily using this system with the help of both the image processing and embedded system technology efficiently.

REFERENCES

- Website:**
www.howstuffworks.com
www.answers.com
www.WineYard.in
www.Wikipedia.com
Magazines:
 Electronics for you
 Elektrikindia

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