

## Identification Of Foreground Moving Targets Between Each Video Frame And Two Different Image In Single Frame

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**Abstract:** A Monitoring And Alerting Application Is Introduced In This Paper. Ip Cameras Are Special Cameras That Stream The Video Feed Into The Internet As A Video Stream. This Stream Is Captured And Can Be Monitored For Any Unauthorized Activities. Motion Detection Is Done When Movements Are Detected And The Alarm Goes On If Such Movements Are Detected. We Can Start The Alarm Feature By Entering A Password And Clicking On Start Button. Only A Password That Started The Surveillance Can Be Re-Entered To Disable The Alarm. Also Has The Feature To Record The Video Stream On Detection Of Movements. Enabled For Both Local Cameras As Well As Ip Cameras. Remote Monitoring From Any Part Of The World Using A Very Efficient Motion Detection Algorithm For Better Security.

**Keywords** – Ip Cameras, Motion Detection , .Net, Remote Monitoring, Video Stream.

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### I. Introduction

A Method To Change An Image Into Digital Form And Execute Some Operations On It, In Order To Get An Improved Image Or To Mine Some Constructive Information From It Is Called Image Processing. The Image Is Analyzed And Manipulated In Some Way. This Stage Can Include Image Enhancement And Data Compression, Or The Image May Be Analyzed To Discover Patterns That Aren't Visible By The Human Eye. Output The Result In Image Altered In Some Way Or A Report Based On Analysis Of The Image Might Be The Result.

#### 1. Existing System

The Currently Existing Systems Provide Very Large Variety Of Unwanted And Also Heavy Components Which Make The Application Very Hard For Usage, And Also Not Fit For The Actual Purpose. They Too Provide Limitation For User Connectivity Through Licensing. This Makes Us Unable To Utilize The Root Purpose Of The Software At Ease. Existing Systems Make It Difficult For The Users To Understand The Design And Working That Makes Them Believe The Software Is Very Much Harder Than Using Some Other In Efficient Methodology. Also Local Camera Capability Is Limited And Only Remote Camera Monitoring Facility Is Enabled.

#### 1.1 Limitations

- **Instability:** The Existing Systems Have A Very Large Stability Issues Which Are Very Annoying.
- **Locality Support:** The Local Camera Is Not Supported
- **Inefficiency:** The Existing Systems Do Not Have A Very Good Efficient Motion Detection Due To Which People Don't Want To Use Them In Most Cases.

#### 2. Proposed System

The Proposed System Is Very Efficient Software That Can Be Used To Detect And Monitor Security. Simple Architecture Makes It User Friendly. It Does This By Using A Very Efficient Motion Detection Algorithm With A Variable Sensitivity Which Makes It Vital For The Security Purpose.

#### 3. Advantages

- **ROBUST:** It Is A Very Simple And Efficient System Which Is Very Much Robust Under Heavy Usage Also.
- **STABLE:** Does Not Crash Even If Under Much Load.

## **II. Modules**

### **1. Camera Video Module**

A Camera Related Operations Package Is Used In Order To Handle The Camera Related Methods. Here We Use The Camera Class In Order To Capture The Camera Feed Either Of The Local Camera Or The Remote IP Camera And Then Display It In A Window. This Would Be Visible Along With The Other Security Controls To The User.

### **2. Motion Detection**

The Motion Detection Module Consists Of The Motion Detection Algorithm Which Helps Us To Analyze The Camera Feed And To Detect And Signal Any Motion Related Triggers. It Also Comes With A Motion Sensitivity Panel Where You Get To Adjust The Level Of Motion Sensitivity That Might Be Required.

### **3. Notification**

Alarm System Covers The Remaining Part Of The Project On Alerting The User Regarding The Security Threat. This Is Done By Detection Of Any Motion And A Alarm Sound Is Set On. This Alarm Alerts The User About The Security Issue Which Might Be Present. It Also Records The Video On Triggering The Alarm.

## **III. System Study**

### **1. Feasibility Study**

The Feasibility Of The Project Is Analyzed In This Phase And Business Proposal Is Put Forth With A Very General Plan For The Project And Some Cost Estimates. During System Analysis The Feasibility Study Of The Proposed System Is To Be Carried Out. This Is To Ensure That The Proposed System Is Not A Burden To The Company. For Feasibility Analysis, Some Understanding Of The Major Requirements For The System Is Essential.

Three Key Considerations Involved In The Feasibility Analysis Are

- ECONOMICAL FEASIBILITY
- TECHNICAL FEASIBILITY
- SOCIAL FEASIBILITY

#### **1.1 Economical Feasibility**

This Study Is Carried Out To Check The Economic Impact That The System Will Have On The Organization. The Amount Of Fund That The Company Can Pour Into The Research And Development Of The System Is Limited. The Expenditures Must Be Justified. Thus The Developed System As Well Within The Budget And This Was Achieved Because Most Of The Technologies Used Re Freely Available. Only The Customized Products Had To Be Purchased.

#### **1.2 Technical Feasibility**

This Study Is Carried Out To Check The Technical Feasibility, That Is, The Technical Requirements Of The System. Any System Developed Must Not Have A High Demand On The Available Technical Resources. This Will Lead To High Demands On The Available Technical Resources. This Will Lead To High Demands Being Placed On The Client. The Developed System Must Have A Modest Requirement, As Only Minimal Or Null Changes Are Required For Implementing This System.

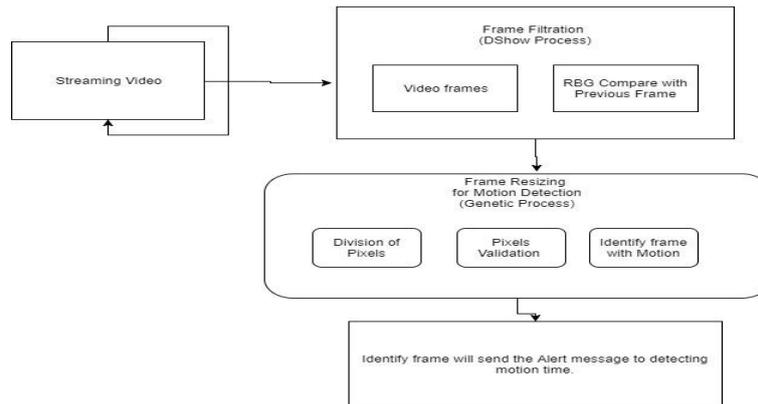
#### **1.3 Social Feasibility**

The Aspect Of Study Is To Check The Level Of Acceptance Of The System By The User. This Includes The Process Of Training The User To Use The System Efficiently. The User Must Not Feel Threatened By The System, Instead Must Accept It As A Necessity. The Level Of Acceptance By The Users Solely Depends On The Methods That Are Employed To Educate The User About The System And To Make Him Familiar With It. His Level Of Confidence Must Be Raised So That He Is Also Able To Make Some Constructive Criticism, Which Is Welcomed, As He Is The Final User Of The System.

## **IV. System Design**

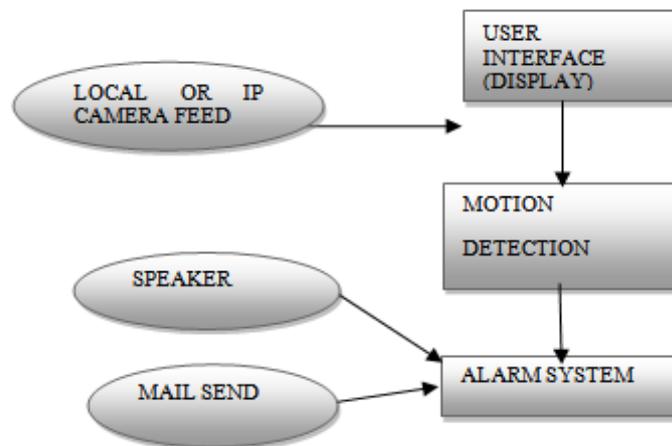
### **1. System Architecture**

Systems Design Is The Process Of Defining The Architecture, Components, Modules, Interfaces, And Data For A System To Satisfy Specified Requirements. The Software In This Paper Has A Stable Architecture Which Is Built In Such A Way To Work Perfectly Right Even At Conditions Of Much Less Resources. This Is So Because It Is Not Concentrated On More Of Look And Feel, Additional Payloads But Is Very Simple To Make And Produce Results Of The Expected Outcome.



**Fig.1** System Architecture

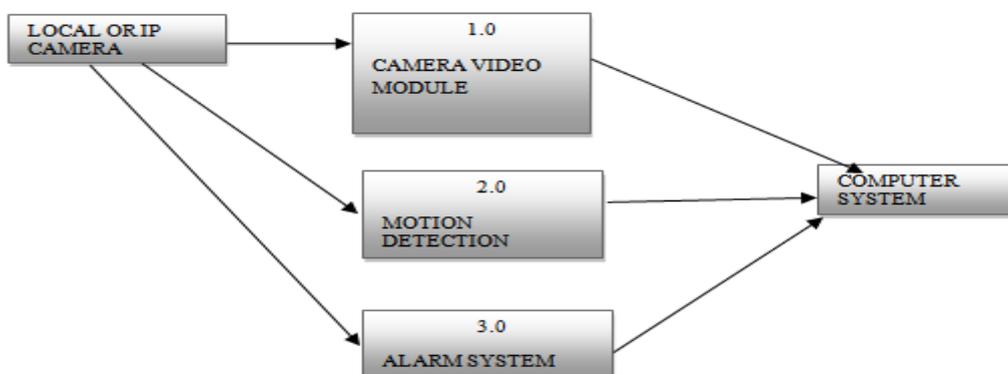
**4.1 Flow Diagram**



**Fig. 4.1** Flow diagram

A Camera Related Operations Package Is Used In Order To Handle The Camera Related Methods. Here We Use The Camera Class In Order To Capture The Camera Feed Either Of The Local Camera Or The Remote IP Camera And Then Display It In A Window. It Gives The Notification Either Through Mail Or Through Speaker.

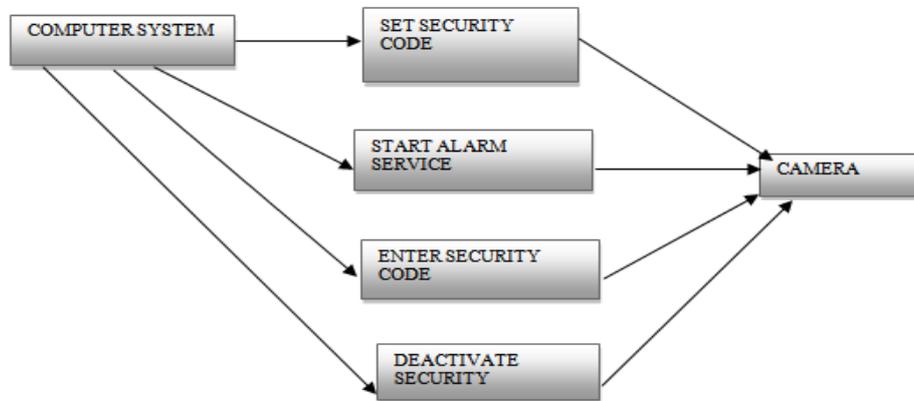
**4.2. DFD – LEVEL 0**



**Fig.4.2** DFD – LEVEL 0

A Camera Related Operations Package Is Used In Order To Handle The Camera Related Methods. Here We Use The Camera Class In Order To Capture The Camera Feed Either Of The Local Camera Or The Remote IP Camera And Then Display It In A Window.

**4.3. DFD – LEVEL 1**



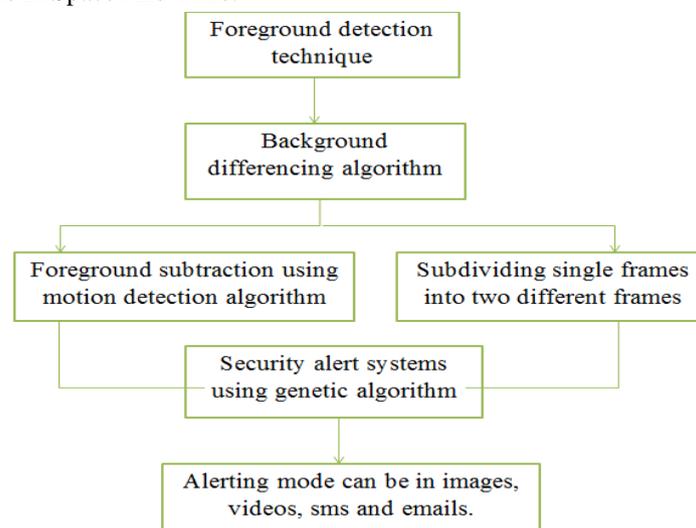
**Fig.4.3 DFD – LEVEL 1**

The Image Is Analyzed And Manipulated In Some Way. This Stage Can Include Image Enhancement And Data Compression, Or The Image May Be Analyzed To Discover Patterns That Aren't Visible By The Human Eye. Output The Result In Image Altered In Some Way Or A Report Based On Analysis Of The Image Might Be The Result.

**V. Techniques**

**1. Context Aware Motion Descriptor**

A Structural Activity Model That Integrates Activity Durations, Motion Features And Various Context Features Within And Across Activities Is Built Upon Automatically Detected Action Segments To Jointly Model Related Activities In Space And Time.



**2. Video Representation**

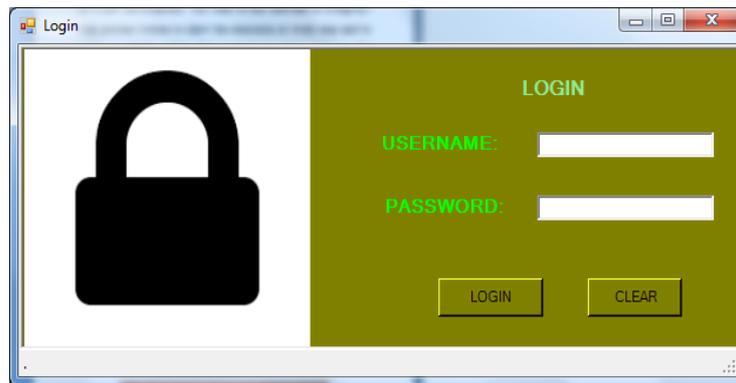
Given A Continuous Video, Background Substraction Is Used To Locate The Moving Objects. Moving Persons Are Identified. The Bounding Boxes Of Moving Persons Are Used As The Initialization Of The Tracking Method Developed To Obtain Local Trajectories Of The Moving Persons. Spatio-Temporal Interest Points (STIP) Features Are Generated Only For These Motion Regions. Thus, Stips Generated By Noise, Such As Slight Tree Shaking, Camera Jitter And Motion Of Shadows, Are Avoided. Each Motion Region Is Segmented Into Action Segments Using The Motion Segmentation Based On The Method With STIP Histograms As The Model Observation.

## VI. Appendix

### 1. Figures



**Fig.6.1** Welcome Form



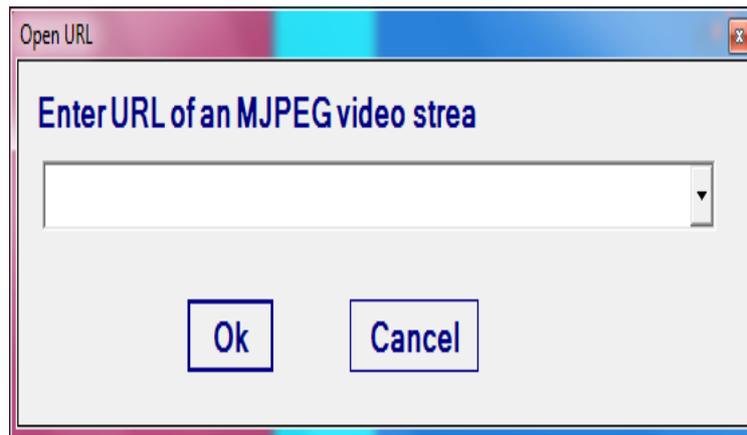
**Fig.6.2** Authentication



**Fig.6.3** Authentication Login



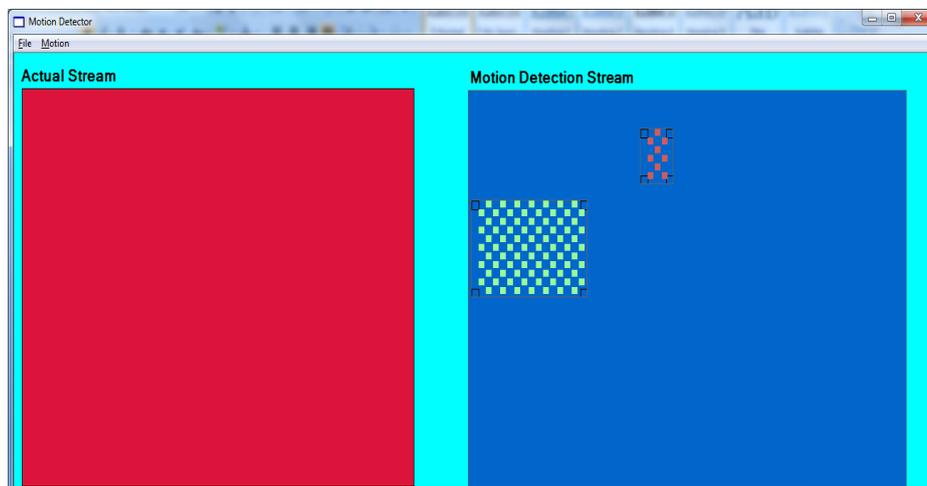
**Fig. 6.4** Camera And Detection



**Fig. 6.5** Video Capture Device Form



**Fig. 6.6** Email And Authentication



**Fig. 6.7** Output

## **VII. Conclusion**

Although The Application Of Remote Camera Monitoring Is Not A New Area Of Development, But The Novelty In The Current System Is The Utilization Of The Local Camera Also Along With The Remote IP Camera That Makes The System Ubiquitous. The Application Apis Have Been Designed In Such A Way That It Can Be Used As Interface Between Wide Range Of People And Clients. The Aspect Can Be Used As A Generic Platform For Many Other Security Monitoring Applications.

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