



CAR PLATE IMAGE ENHANCEMENT BY USING MOBIL

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ABSTRACT

Cell phones are the perfect way to stay connected with other and provide the user with a sense of security. However, the importance of cell phone goes way beyond personal safety. Modern cell phones are capable of internet access, sending and receiving photos and files, and some cell phones are equipped with GPS technology, allowing for use the most locations around the world and allowing the cell phone to be found or the user located in the event of loss or emergency.

This research focuses on the establishment of rules and basic foundations for imaging the car plate number by using a set of different types of Mobil phones.

Also this research can cent rates on provide the foundations in image transmission between the phones. The type of the used phone will be determined and used as a sender and receiver depending on the transmitted image size. The image will be send to the main computer for processing.

Keywords: *Plate Image, Mobil Phone, Image Rules, Car Number, Image Size.*

1. INTRODUCTION.

Cell phones have become a necessity for many people throughout the world. The ability to keep in touch with family, business associates, and access to email are only a few of the reasons for the increasing importance of cell phones. Today's technically advanced cell phones are capable of not only receiving and placing phone calls, but storing data, taking pictures, and can even be used as walkies talkies, to name just a few of the available options.

Cell phone reception has become reliable and of high quality due to, advances in wireless technology. Wireless service providers often excellent packages and promotions for cell phone user. Finding a dependable Service provider is no longer an issue for cell phone user. The expansion of the wireless service provider industry gives cell phone users a choice and the increased competition has caused a drop in prices of wireless cell phone service. The importance of cell phones goes way beyond the ability to make or receive phone calls. Cell phone users can instantly send data to the home or office, check for important email, use their cell phone as a PDA (Personal Digital Assistant) or calendar, and store photos which can be easily transformed to a PC or laptop computer.

Because of the versatility and portability of mobile phones many major companies across the world that value instant integrated communications are now issuing Mobil phones, to their extended workforce. The need of accessing corporate email on the move is growing day by day. Not only can colleagues keep in touch by voice, they can also email and share files by sending as attachments that otherwise would need to be sent via PC. Thus, the majority of the mobile workforce has an inherent requirement for wireless access to email account.

Camera on a cell phone now is a slandered feature and these days' camera cell phones are everywhere. And not only are they pervasive, they are also getting better with higher mega pixel performance and plans for more sophisticated camera features such as focus and optical zoom.

The main features, and the one that is usually advertised, is the resolution. Most low or mid-rang cell phone with a VGA camera. The resolution is shown as either VGA or an amount of mega pixels, it's important to know that this is the main thing that will decide how good pictures will look, because a higher resolution means you have bigger pictures or more details in them. A VGA camera will save pictures in 640 × 480 format, which mean 640 pixels horizontally, and 480 vertically- to find out how many mega pixels that is:



$$640 * 480 = 307.200$$

Which is 0.37 mega pixels. So going from a VGA camera (0.37 mega pixels) to a 2 mega pixels camera will make a huge difference for image resolution will increase with camera. Mega pixels accordingly – overall, a VGA camera will make poor pictures in almost all cases, simply because it's such a low resolution, but a 1.3 mega pixels or higher camera will fire for printing photos.

2- THE PROBLEM :-

Due to the Existence of a large number of cars in the capital Amman and the neighbored cities, there are fixed cameras on the Traffic light and on the motor ways. These cameras recording the penalty in case the drivers passed the red light.

Outside these boundaries, the policemen need to record the penalty manually. This process is very slow and there is possibility of errors in recording the car number.

For the above reasons, a pattern has been designed and it depends on photo of the car number through using the mobile phone and sending the picture to the computer centre on the traffic police office to record the penalty.

3- THE PROPOSED SOLUTION

Six different types of mobile phones have been applied for taking photo for the car numbers. The size of the picture has been calculated in kilobytes and also the distance between the camera and the plate has been counted. The height of the camera from the ground also been considered. Six tables have been constricted. For each table, the average of distance and height has been calculated. The general average for the six averages for the six averages for the tables has been counted. Some rules have been implemented for the procedure of taking photos for the car numbers. The following rules have been suggested to get a clear picture:

1. The Image size should be 600×450 pixels.
2. The position of plate is centred.
3. The Image must be taken 64-85 cm for form the car with the height approximately 45 cm from the ground.
4. The position of plate in Image is in the centre.
5. Lighting must be given proportionally.

4- THE EXPERIMENTAL RESULT:-

Six types of mobile phones have been used in taking photos for the car plates. These types are: Nokia 2600, Nokia N73, Samsung SGH – E 250, Nokia E50 Nokia 3250, and Nokia 6313. The result as in the following table:

Mobile type	Average high\cm	Average Distance \cm
Nokia2600	43.7	71.1
Nokia N73	44.8	66.83
Samsung SGH-E250	47.17	57.60
Nokia E50	46.71	66.33
Nokia3250	43	62.83
Nokia6313	45.16	60.06
Average	45.09	64.125

Table 1

Following the rules will give the best result in analyses of the photo.

Also the time required for taking the photo with following the rules is only one minuet.

To send the taken photo to the computer centre, it is preferable to send two photos instead one to assure the correct analysis for the photo.

It is preferable to use the medium devices in transmission process such as Nokia 2600. In receiving process it is possible to use any type of the used mobiles. The reason as we noticed in Table (2) that the size of the picture taken by the modern mobile is very large. Most of the mobile minimizes the photos by 5% and the picture still very large. While some mobiles minimizes that already small photos by the same present and we get photo with size less than 10K which is suitable size.

5- CONCLUSION:-

Form the experimental results we can conclude the following:

- A. It is better to send the photo twice to the computer center for better analysis.
- B. The sender call phone from the mid range prices is better in sending photos because the photo will be smaller.
- C. It is better to use the cell phones with will-range quality camera.



Sender Mobile	Original Image Size	Image Size When sender	Receiver Mobile	Image Size when received	Image size After Saving	Image size on computer
Nokia 2600	93 KB	5.1 KB	Nokia N95	6 KB	5 KB	6 KB
Nokia E50	57 KB	10 KB	Nokia 2600	9.3 KB	9.3 KB	10 KB
Nokia E50	48 KB	8 KB	Nokia N95	8 KB	7 KB	8 KB
Nokia N95	522 KB	32 KB	Nokia 2600	32 KB	32 KB	32 KB
Nokia N95	457 KB	25 KB	Nokia E50	25 KB	24 KB	25 KB
Nokia N73	476 KB	24 KB	Nokia E50	24 KB	23 KB	24 KB
Nokia 2600	80 KB	4.3 KB	Nokia E50	5 KB	4 KB	5 KB
Nokia 2600	80 KB	4.3 KB	Nokia N73	5 KB	4 KB	5 KB

Table 2

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