

TRANSFORMING DIGITAL INFORMATION USING QR CODE TO TRANSPORT AUTHORITY

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ABSTRACT. User can maintain a certificates in big data storage. Big data storage is a computing model in which data is stored in remote server access from the internet. It is maintained operated and maintained by cloud storage service provider and storage server that are built on virtualization technique. Big data storage on provide the benefits of greater accessibility and reliability , rapid deployment, strong protection for data backup, archival and disaster recovery purpose; and lower overall storage cost as the result of not having to purchase manage and maintain expensive hardware. We can implement the project that is centralized, clustering based certificate managing platform that simplifies and used to maintain all the certificate with us. They can register into the system and upload the certificate such as voter ID, driving license etc . These details are converted into QR code. Admin can store the QR code details with certificate information. User can view, download and print the certificate anywhere and anytime. This application can be user friendly and easy access GUI for all users. If the user downloads the certificate, OTP is generated and send to user for future usages. We can use this application for traffic police inception. Police can scan the QR code to get the details about documents and also verified information sent to user. If any corruption means, user can post the complaints about police and forward admin for future actions. if any corruption means , user can post the complaints about police and forward admin for future options.

1. INTRODUCTION

Mobile Computing is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link. The main concept involves –

- Mobile communication
- Mobile hardware
- Mobile software

Mobile communication

The mobile communication in this case, refers to the infrastructure put in place to ensure that seamless and reliable communication goes on. These would include devices such as protocols, services, bandwidth, and portals necessary to facilitate and support the stated

services. The data format is also defined at this stage. This ensures that there is no collision with other existing systems which offer the same service. Since the media is unguided/unbounded, the overlaying infrastructure is basically radio wave-oriented. That is, the signals are carried over the air to intended devices that are capable of receiving and sending similar kinds of signals.

Mobile Hardware

Mobile hardware includes mobile devices or device components that receive or access the service of mobility. They would range from portable laptops, smartphones, tablet Pc's, Personal Digital Assistants. These devices will have a receptor medium that is

capable of sensing and receiving signals. These devices are configured to operate in full-duplex, whereby they are capable of sending and receiving signals at the same time. They don't have to wait until one device has finished communicating for the other device to initiate communications. Above mentioned devices use an existing and established network to operate on. In most cases, it would be a wireless network

Mobile software

Mobile software is the actual program that runs on the mobile hardware. It deals with the characteristics and requirements of mobile applications. This is the engine of the mobile device. In other terms, it is the operating system of the appliance. It's the essential component that operates the mobile device. Since portability is the main factor, this type of computing ensures that users are not tied or pinned to a single physical location, but are able to operate from anywhere. It incorporates all aspects of wireless communications. In today's computing world, different technologies have emerged. These have grown to support the existing computer networks all over the world. With mobile computing, we find that the need to be confined within one physical location has been eradicated. We hear of terms such as telecommuting, which is being able to work from home or the field but at the same time accessing resources as if one is in the office.

2. RELATED WORK

Clustering analysis plays an important role in the data mining field, it is a method of clustering objects or patterns into several groups. It attempts to organize unlabeled input objects into clusters or “natural groups” such that data points within a cluster are more similar to each other than those belonging to different clusters, i.e., to maximize the intra-cluster similarity while minimizing the inter-cluster similarity. In the field of clustering analysis, a number of methods have been put forward and many successful applications have been reported. In existing system, implement fuzzy c means clustering algorithm to group the data. In existing system, we can store the certificates in offline storage system and using clustering algorithms to group certificates and user can keep the certificate in hand. The certificates may be loss when keep it in hand. Multiple users can be easily extracting the details without security.

3. PROPOSED SYSTEM

Big data are any data that you cannot load into your computer's primary memory. Clustering is a primary task in pattern recognition and data mining. We need algorithms that scale well with the data size. The former implementation, literal Fuzzy C-Means is linear or serialized. FCM algorithm attempts to partition a finite collection of n elements into collection of c fuzzy clusters. So, given a finite set of data, this algorithm returns a list of c cluster centers. However it doesn't scale well and slows down with increase in the size of data and is thus impractical and sometimes undesirable. In this project, we

propose an extended version of clustering algorithm by means of random sampling technique to group the certificates. Certificates may be voter id, aadhar id, mark sheets or other important documents. Certificates are uploaded by users and implement automatic extraction approach to extract the certificate number from certificates. Admin can match the certificate number to database to predict fake user and restriction provide to upload the certificates. Then implement security concept at the time of retrieving files from big data storage by using QR code scanning. A QR code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera, and processed using Reed–Solomon error correction until the image can be appropriately interpreted.

4. ALGORITHM

QR code based recognition:

- One of the most challenging topics is the recognition of QR code recognition from image and encryption or decryption the information.
- The recognition of QR code that was defines by computer or made by the computer its self-using some encryption or decryption algorithm.

Linear Classifier:

Linear classifier views the classification problem as a quadratic optimization problem. The technique has successfully been applied to standard classification tasks, such as text

classification and medical diagnosis. Classifier avoids the “curse of dimensionality” by placing an upper bound on the margin between the different classes, making it a practical tool for large, dynamic datasets. The feature space may even be reduced further by selecting the most distinguishing features through minimization of the feature set size. Linear classifier plots the training vectors in high-dimensional feature space, and labels each vector with its class. Linear classifiers provide a generic mechanism to fit the surface of the hyperplane to the data through the use of a kernel function. The user may provide a function, such as a line, polynomial, or sigmoid curve, to the linear classifier, which selects vectors along the surface of this function. In the case of linearly inseparable datasets, the cost of misclassification is accepted through the use of ‘slack variables’.

This hyper plane is constructed as:

$$f(\mathbf{x}) = \langle \mathbf{w}, \mathbf{x} \rangle + b$$

Where \mathbf{x} is the feature vector, \mathbf{w} is the vector that is perpendicular to the hyper plane and $b \|\mathbf{w}\|^{-1}$ specifies the offset from the beginning of the coordinate system. This mapping is defined as follows:

$$\langle \varphi(\mathbf{x}_1), \varphi(\mathbf{x}_2) \rangle = K(\mathbf{x}_1, \mathbf{x}_2) \quad \forall (\mathbf{x}_1, \mathbf{x}_2) \in X$$

for some kernel function $K(\cdot, \cdot)$. The kernel function represents the non-linear transformation of the original feature space into the F . Consider QR image data set $\mathbf{x} = \{\mathbf{x}_1, \mathbf{x}_2, \dots, \mathbf{x}_n\}$, where n is the total number of pixels, $\mathbf{x}_i = [x_{i1}, x_{i2}, \dots, x_{id}]^T$ denotes the spectral vector associated with an image pixel i , d is the spectral bands. Let $\mathbf{y} = \{\mathbf{y}_1, \mathbf{y}_2, \dots, \mathbf{y}_n\}$ and $\mathbf{K} =$

$\{1 \dots K\}$ where K is the total number of classes. If $y_i^{(k)} = 1$ and $y_i^{(c)} = -1$ for $c \in \{K \mid c \neq k\}$, then pixel i belongs to class k . The classic binary linear classifier can be expressed as the following function:

$$f(x_i) = y_i = \text{sgn} \left(\sum_{i=1}^{l_n} y_i \alpha_i (x_i^T \cdot x) + b \right)$$

For simplicity, it is sometimes necessary to set $b = 0$ to ensure that the hyper-plane passes through the origin of the coordinate system. Thus, the soft margin concept and the kernel method have been introduced to cope with non-separable scenarios. The underlying idea of the kernel method is to map the data via a nonlinear transformation $\mathcal{O}(\cdot)$ into a higher dimensional feature space such that the nonseparable delinquent can be solved by replacing the original input data (x_i, x_j) with the transformed data $[\mathcal{O}(x_i), \mathcal{O}(x_j)]$, i. e.,

$$K(x_i, x_j) = [\mathcal{O}(x_i), \mathcal{O}(x_j)]$$

where $K(x_i, x_j)$ is the kernel function.

5. USECASE DIAGRAM

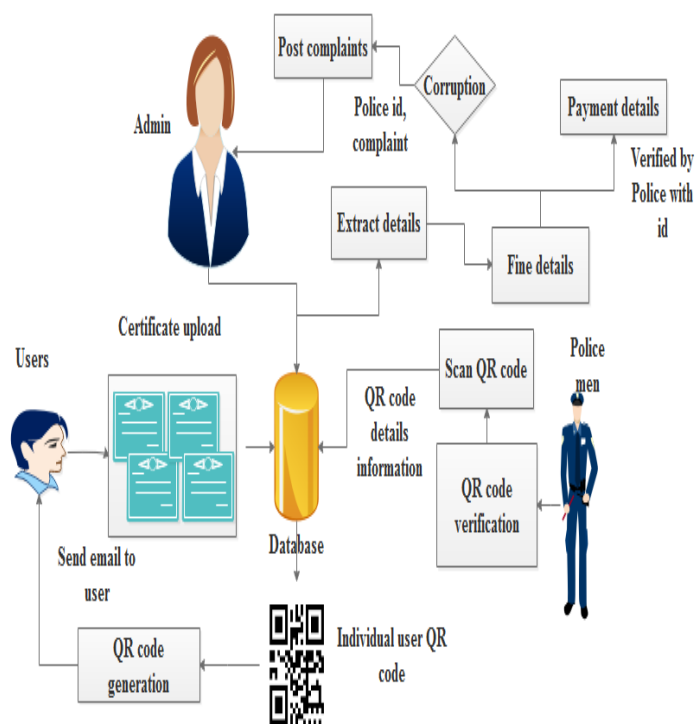


Fig 1.1: usecase model

6. SYSTEM IMPLEMENTATION

6.1 MODULES:

- APPLICATION FRAMEWORK
- CERTIFICATE UPLOAD
- QR CODE GENERATION
- VERIFICATION
- CERTIFICATE RETRIEVAL
- POST COMPLAINTS

6.1.1 APPLICATION FRAMEWORK:

In this module, create the application in android with cloud environments. Mobile *app development* is a term used to denote the act or process by which a mobile *app* is developed for mobile devices, such as personal digital assistants, enterprise digital assistants or mobile

phones. We can create the application for certificate manages in cloud systems. The certificate may be voter id, aadhar id, license plate and other certificates. User can be register in to the system, after that login to the system to view their page. This page contains the details about certificates.

6.1.2 CERTIFICATE UPLOAD:

In this module, we can upload the certificate into cloud. Admin can extract the user details, account details and certificate details. Certificates are clustered based on user id. The user can login to the system to view all certificates. And also update the certificates as per user wish.

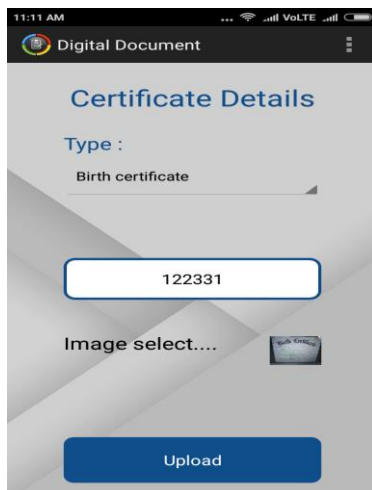


Fig 1.3: certificate upload

6.1.3 QR CODE GENERATION:

The user details are generated using QR code. QR code details are stored in the form of square matrix. The QR code is two dimensional and readable at any direction. It is readable if they are partially damage. It is very easy scan the camera based device. The QR code is not readable by person. The QR code can stores the data is stored one dimensional bar code in one tenth the space. The QR code is providing

information accurately then it is damage up to thirty percent. The QR code can handle many types of data link numeric and alphabetic.

The QR code can be transmitted to user via email.



Fig 1.2: QR generation

6.1.4 VERIFICATION:

QR code verification can be done by police. The details are extracted and view the certificates. A QR code is made up of four main parts:

1. Finder patterns: These are the big black/white/black squares on the three corners on the QR code. These help identify the presence of a QR code in an image and it's orientation. These are made such that they can be detected really fast.
2. Alignment patterns: These are smaller than finder patterns and help straighten out a QR codes drawn on a curved surface. The larger a code, the more alignment patterns it'll have.

3. Timing pattern: These are alternating black/white modules on the QR code. The idea is to help figure out the data grid accurately.
4. The actual data: The blacks/whites form bits. Groups of 8 such modules make one byte. You could combine 16 modules to get uni-code data.

The QR code can be verified by police with database.

6.1.5 CERTIFICATE RETRIEVAL

After verification, certificate can be downloading from the database. All certificates are extracted from cloud database. Police can be verified and provide fine details about the various reasons such as without wearing helmets, over speed and so on. The fine amount details stored and database.

6.1.6 POST COMPLAINTS

If the police can be collect more money for fine means, user can post the complaints in home page. The user can post complaints based on police verification id. The complaint can be forward to admin and admin can take the actions with proper intimation.

7. RESULT AND DISCUSSION

Central government of India introduced a new mobile application for road transport (Name: PARIHARAN).In that application there is no facilities for storing our personal certificates and verification system. In our project user can easily store the certificates and verify it easily. And also illegal activities can be reduced.

8. CONCLUSION

Mobile cloud data refers to datasets that cannot be managed with current technologies or data mining software tools due to their large size and complexity. Big data mining is the capability of extracting useful information from these large datasets or streams of data. An effective way to cluster the large volume of data is clustered with secure access. In existing system, user can keep the certificate in hand. The hard copy of the document can be lost and corruption can be occurred in manual checking process. The above problems can overcome by the Distributed Environment has been set up where the very large datasets need to be reduced. Certificates are managed securely and distributed to users based on structured database. Admin can easily predict the fake certificates based database and finally provide security based on QR code security. All user details are stored in QR code. The police can easily scan and extract the information and proceed with any verification. The user can also post the complaints in terms of corruption can be occurred. The real time implementation in mobile cloud environments

9.REFERENCES

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