**LITERATURE SURVEY**

**1) Image Digital Watermarking Algorithm Using Multi-Resolution Wavelet Transform**

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Watermarking is a technique for labeling digital picture by hiding secret information in the images. This paper presents a method of watermark embedding and extracting based on discrete wavelet transform of blocks and Arnold transform. Different with most previous work, which uses a random number of a sequence of bits as a watermark, the proposed method embeds a watermark with visual recognizable patterns, such as gray image in images. In the proposed method, each pixel of watermark is embedded in the wavelet coefficient of the middle and low frequency of a block in the images. Unlike other watermarking techniques that use a single casting energy, this method casts watermarks in multi-energy level. The performance of the proposed watermarking is robust to variety of signal distortions, such a JPEG, image cropping, sharpening, and blurring attacks.

**2) Cloud Mobile Media Opportunities, Challenges, and Directions**

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Three recent developments - increasing adoption of smart phones and tablets as desired platforms for infotainment, increased access to mobile broadband networks globally, and availability of public Clouds - are aligning to possibly enable a new generation of truly ubiquitous multimedia services on mobile devices: Cloud Mobile Media (CMM) services. Such services will be able to avail of the elasticity of cloud computing and ubiquity of cloud storage, and thereby not constrained either by mobile device capabilities, or availability of content. In this paper, we look at early trends in CMM services, and opportunities and benefits for new CMM services in the near future. We analyze the possible impact of such services, and issues that need to be addressed to make CMM services viable, including response time, user experience, energy, privacy, cost and scalability. We provide several directions for possible solutions, which include developing response time management techniques, scalable cloud media application, and cloud user experience measurement techniques. We also propose extending the Cloud beyond the traditional Internet to the edge of the wireless networks.

**3) Security Protection between Users and the Mobile Media Cloud**

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Mobile devices such as smartphones are widely deployed in the world, and many people use them to download/upload media such as video and pictures to remote servers. On the other hand, a mobile device has limited resources, and some media processing tasks must be migrated to the media cloud for further processing. However, a significant question is, can mobile users trust the media services provided by the media cloud service providers? Many traditional security approaches are proposed to secure the data exchange between mobile users and the media cloud. However, first, because multimedia such as video is large-sized data, and mobile devices have limited capability to process media data, it is important to design a lightweight security method; second, uploading and downloading multi-resolution images/videos make it difficult for the traditional security methods to ensure security for users of the media cloud. Third, the error-prone wireless environment can cause failure of security protection such as authentication. To address the above challenges, in this article, we propose to use both secure sharing and watermarking schemes to protect user's data in the media cloud. The secure sharing scheme allows users to upload multiple data pieces to different clouds, making it impossible to derive the whole information from any one cloud. In addition, the proposed scalable watermarking algorithm can be used for authentications between personal mobile users and the media cloud. Furthermore, we introduce a new solution to resist multimedia transmission errors through a joint design of watermarking and Reed- Solomon codes. Our studies show that the proposed approach not only achieves good security performance, but also can enhance media quality and reduce transmission overhead.