ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 12, December 2015

Survey on Dynamic Backlight Scaling Optimization

Dipali Bhalekar, Dipali Sangle, Sanjana Tajave, Seema Thakare , Arivanantham Thangavelu

B.E Students, Dept. of IT, Dr. D. Y. Patil Institute of Engineering and Technology, Pune, India

ABSTRACT: The popularity of mobile deviceshave been increased due to Advances in information and communication technology. Because of increased in need of mobile devices people lifestyle get changed. However, reducing the energy required by mobile devices that utilize the applications and services is a major challenge. Researchers have been exploring various low-power system designs by targeting different types of energy intensive components and power management policies from the different perspectives. Recent invention on mobile user activity indicated that the backlight used to illuminate the display subsystem reduce most of the energy; that's why, it should receive the most attention with respect more addicted to multimedia applications and the ability to disseminate videos via social network to improving energy efficiency Furthermore, mobile users nowadays are becoming communities

Such addiction behavior of user will lead to a significant increase in the energy requirement of mobile devices, especially with the high exception for larger, higher-resolution screens. This observation motivates us to explore how to minimize the backlight energy requirement when browsing multimedia streaming applications on mobile device applications. The display system needs to stay in active mode for as long as the video is displayed; thus, a sensible way to save the energy is to lowert he backlight. However, this may lead to image distortion, which is normally consider similar between the original video image and the backlight-scaled image. For example, the structural similarity (SSIM) index , a metric specially designed to reliable to the perception of the human eye, is widely used to assessdistortion. Different types of effective backlight scaling techniques have been developed to limit the distortion and/or maintain the fidelity of a image when the backlight is lowed. The just noticeable difference of the human visual system is exploited by the approach in , so that the incurred image distortion is confined up-to a tolerable threshold and does not lowed the clarity of the display significantly. Various image compensation techniques, for example, have also been proposed to further lowered the backlight. They compensate for the image distortion through image pixel transformation and further reduce the energy required at the same time. These techniques determine the dimmest backlight level for a single image .

KEYWORDS:SSIM **(**Structural Similarity Index Method**),** Dynamic Backlight Scaling Optimization.

I. INTRODUCTION

Increasing variety of mobile applications, reducing the energy requirement of mobile devices is a major challenge in multimedia applications. This paper explores how to minimize the energy requirement of the backlight when displaying a video without adversely impacting the user's visual experience. First, situation we consider the as a dynamic backlight scaling optimization problem.

Then, we propose algorithms to solve the fundamental problem in energy requirement and prove the optimality in saving the energy . Finally, based on the algorithms, we present a cloud-based energy-saving service. The results of experiments conducted to evaluate the efficacy of the proposed approach are very encouraging and show energy savings of 15-49 percent on commercial mobile devices.

Mobile consumer-electronics devices, especially mobile applications, are powered from batteries which are limited in size as well as capacity. This shows that managing energy well is paramount in such devices. Mobile devices uses the

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energy required for their operation from batteries. Many consumer-electronics devices, especially in case of mobile phones, the battery capacity is severely limited due to constraints on size and weight of the device. This shows that energy efficiency of these mobile devices is very important to their efficiency. Hence, maximum management of power requirement of these devices is critical. Modern high-end mobile application combine the functionality of a pocket-sized communication device with PC capabilities, resulting in what are generally referred to as Smartphone. These integrate different functions such as voice communication, audio,web browsing video playback, short-message and email communication, media downloads, gaming and more. The high functionality increases the pressure on battery lifetime, and deepens the need for effective energy management.

II. LITERATURE SURVEY

1. According to the investigation of energy-efficient policy for transcoding a sa service (TaaS) in a generic mobile cloud system. Calculations on mobile devices can be unloaded to a mobile cloud system ,that the frontend consists of a dispatcher and a set of service engines at the back end. Transcoding task can be executed on the mobile device (i.e. mobile execution) and scheduled by the dispatcher to one of the service engines in the cloud. We aim to minimize the energy requirement of transcoding on the service and mobile device engines in the cloud while achieving low delay. For the mobile device applications, we formulate its policy under delay deadline as a constrained optimization condition. We find an operational region on which mobile execution and cloud execution, is more energy efficient for the mobile device application. For the cloud, we propose an online algorithm to dispatch transcoding tasks to service engines, with an aim of reducing energy requirement while achieving queue stability. By appropriately choosing the control variable, the proposed algorithm gives alternative algorithms, with lower time average energy requirement and time averages the queue length on the service engines. The proposed offloading policy can reduce energy requirement on both mobile device applications and the cloud combinely, which provides guidelines for the design of green mobile cloud.

2.Privacy is an main issue in online social networking sites. While sites such as Facebook allow users fine-grained control over the customer who can see their profiles, it is difficult for new users to specify this kind of detailed policy., template for the design of a social networking privacy. The intuition for the design comes from the observation that daily users their privacy preferences (which friends should be able to see which information) based on an implicit set of rules. Thus, with a limited amount of user input, it is usually possible. To build a machine learning rules that concisely describes a particular users preferences, and then use this rules to configure the users privacy settings automatically. Even though the Social Networks today, have the restrictions on the users who can post and comment on any users wall, they do not have any restrictions on what theypost. So, some people may also use the indecent and vulgar words for posting in social networking site. Providing this service is not only a matter of using previously defined web content mining techniques for a various application, rather it requires to design ad hoc classification strategies.

III.PROPOSED SYSTEM

The Purposed system will Minimizes the energy requirement incurred by the backlight when users access multimedia streaming applications on mobile devices.

Specifically, the approach exploits backlight scaling and formulates a fundamental optimization problem with scaling constraints (to limit image distortion, reflect hardware limitation, and consider user perception).

Advantages:

1 Energy saving and Battery Optimization.
2 Faster Downloading Process.
3 Minimize memory requirement of smart phone.

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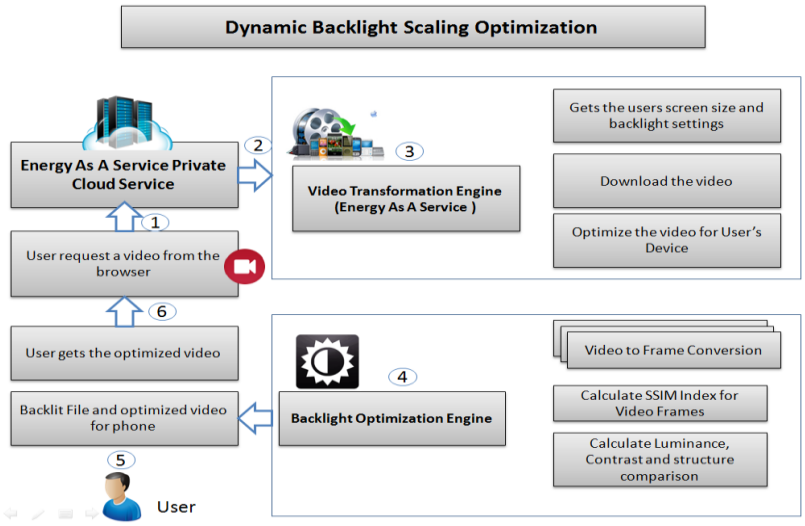
IV.SYSTEM DESIGN



1.Upload video on cloud from android phone.

User the copy link from web browser for downloading video also monition there in which format you want to download it finally send all to cloud for processing the request.

2.Video Transformation Engine

a) Get the users screen size and backlight settings

When user sends a request to the cloud with that user's mobile device back light setting it means it contains device configuration.

b) Download the video

Video will be downloaded from server on cloud.

c) Optimize the video for user's device

Convert video according to users back lightsettings

d) Backlight Optimization Engine

a) Split video in to number of frames

Once video is download then split video in to number of frames .

b) Calculate SSIM index for video frames

Calculate SSIM index of each frame of an image for changing the brightness using backlight optimization algorithm.

c) Calculate luminance contrast and structure comparison

Also find the luminance contrast and structure of each frame for image comparison.

e) Download Video from cloud Server

Download video from cloud server according to the user's device

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f) Save Energy Requirement

V.CONCLUSION

This application gives new annotation based approach towards backlight power saving during multimedia streaming on mobile devices .The main in the application is Backlight Optimization Engine which consist of

1. Frame Extraction
2. SSIM Index
3. Backlight file generation

The final result i.e. video is in compressed format as compare to original video. The application saves the energy requirement required to display video and also thememory storage of the system.

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BIOGRAPHY

Dipali Bhalekar, Dipali Sangle, Sanjana Tajave and Seema Thakare are pursuing B.E. degree in Pune University. They are working on project named Survey On Dynamic Backlight Scaling Optimization.