A Review on Privacy Policy Inference of User-Uploaded Images on Content Sharing Sites

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ABSTRACT: With the increasing volume of images users share through social sites, maintaining privacy has become a major problem, as demonstrated by a recent wave of publicized incidents where users inadvertently shared personal information. In light of these incidents, the need of tools to help users control access to their shared content is apparent. Toward addressing this need, we propose an Adaptive Privacy Policy Prediction (A3P) system to help users compose privacy settings for their images. We examine the role of social context, image content, and metadata as possible indicators of users' privacy preferences. We propose a two-level framework which according to the user's available history on the site, determines the best available privacy policy for the user's images being uploaded. Our solution relies on an image classification framework for image categories which may be associated with similar policies, and on a policy prediction algorithm to automatically generate a policy for each newly uploaded image, also according to users' social features. Over time, the generated policies will follow the evolution of users’ privacy attitude. We provide the results of our extensive evaluation over 5,000 policies, which demonstrate the effectiveness of our system, with prediction accuracies over 90 percent.

KEYWORDS: Music player, Face Detection, Facial Expression Recognition.

I. INTRODUCTION

Most content sharing websites allow users to enter their privacy preferences. Unfortunately, recent studies have shown that users struggle to set up and maintain such privacy settings. One of the main reasons provided is that given the amount of shared information this process can be tedious and error-prone. Therefore, many have acknowledged the need of policy recommendation systems which can assist users to easily and properly configure privacy settings. However, existing proposals for automating privacy settings appear to be inadequate to address the unique privacy needs of images due to the amount of information implicitly carried within images, and their relationship with the online environment wherein they are exposed. In this paper, we propose an Adaptive Privacy Policy Prediction (A3P) system which aims to provide users a hassle free privacy settings experience by automatically generating personalized policies.

II. EXISTING SYSTEM

- Most content sharing websites allow users to enter their privacy preferences. Unfortunately, recent studies have shown that users struggle to set up and maintain such privacy settings.
- One of the main reasons provided is that given the amount of shared information this process can be tedious and error-prone. Therefore, many have acknowledged the need of policy recommendation systems which can assist users to easily and properly configure privacy settings.

III. PROPOSED SYSTEM

- In this paper, we propose an Adaptive Privacy Policy Prediction (A3P) system which aims to provide users a hassle free privacy settings experience by automatically generating personalized policies. The A3P system handles user uploaded images, and factors in the following criteria that influence one’s privacy settings of images:
The impact of social environment and personal characteristics. Social context of users, such as their profile information and relationships with others may provide useful information regarding users’ privacy preferences. For example, users interested in photography may like to share their photos with other amateur photographers.

The role of image’s content and metadata. In general, similar images often incur similar privacy preferences, especially when people appear in the images. For example, one may upload several photos of his kids and specify that only his family members are allowed to see these photos.

IV. ADVANTAGES OF PROPOSED SYSTEM

- The A3P-core focuses on analyzing each individual user’s own images and metadata, while the A3P-Social offers a community perspective of privacy setting recommendations for a user’s potential privacy improvement.
- We design the interaction flows between the two building blocks to balance the benefits from meeting personal characteristics and obtaining community advice.

V. DISADVANTAGES OF EXISTING SYSTEM

- Sharing images within online content sharing sites, therefore, may quickly lead to unwanted disclosure and privacy violations.
- Further, the persistent nature of online media makes it possible for other users to collect rich aggregated information about the owner of the published content and the subjects in the published content.
- The aggregated information can result in unexpected exposure of one’s social environment and lead to abuse of one’s personal information.

VI. SYSTEM ARCHITECTURE

A3P Architecture

- A3P-Core:
  - Image Classification
    - content-based
    - metadata-based
  - Adaptive Policy Prediction
    - policy mining
    - policy prediction

- A3P-Social:
  - social-context modeling
  - pivotal user selection

Diagram:

- User (represented as a stick figure) interacts with the system through:
  1: image
  2: predicted policy
  3: accepted/revised policy

- The system processes this information through various stages and outputs predicted policies.

Diagram Image:

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DOI: 10.15680/IJIRCCE.2017.0503183
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VII. SYSTEM REQUIREMENTS

- **HARDWARE REQUIREMENTS:**
  - System: Pentium IV 2.4 GHz.
  - Hard Disk: 40 GB.
  - Floppy Drive: 1.44 Mb.
  - Monitor: 15 VGA Colour.
  - Ram: 512 Mb.

- **SOFTWARE REQUIREMENTS:**
  - Operating system: Windows XP/7.
  - Coding Language: JAVA/J2EE
  - IDE: Netbeans 8.0
  - Database: MYSQL

VIII. CONCLUSION

We have proposed a two-level framework which according to the user’s available history on the site, determines the best available privacy policy for the user’s images being uploaded. Our solution relies on an image classification framework for image categories which may be associated with similar policies, and on a policy prediction algorithm to automatically generate a policy for each newly uploaded image, also according to users’ social features.

REFERENCES


