



PROPOSAL

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200-53-364

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Feb. 4th, 2018

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Abstract

The proposed project will be designed to identify certain objects in images, potentially using the Google Vision API, and will encrypt the pixels at those locations. This will most likely make use of Swifts Core Image API, which provides easy access to filters and image processing methods. This project will not be focused on the object/face recognition or the image processing, but rather will be a proposal for a cryptographic system that will encrypt certain parts of an image. Thus, the goal of this project is to create an encryption method that will safely and accurately encrypt sections of images. The app will have a similar design to a photo upload application, so the user would pick a photo, for which the application will encrypt a pre-chosen section of the image. Since this project is to be completed for a cryptography class, there will be a predefined number of objects that can be “blurred”/pixelated. This is because the focus of the project is not to intelligently encrypt sections of an image, but to focus on the encryption algorithm itself. Therefore, the user would select an object to encrypt, upload an image containing that object, and will be able to download an image containing that object in a pixelated/blurred state. The struggle with this is assuming that Swift provides enough functionality in its Core Image API to allow sections of an image to be blurred. If there is not enough functionality, since this is not a project that involves the creation efficient image processing mechanisms I will not be extending such functionality. Thus, in that specific case I will simply encrypt the entire picture using some custom cipher mechanism that will map to specific pixel attributes.