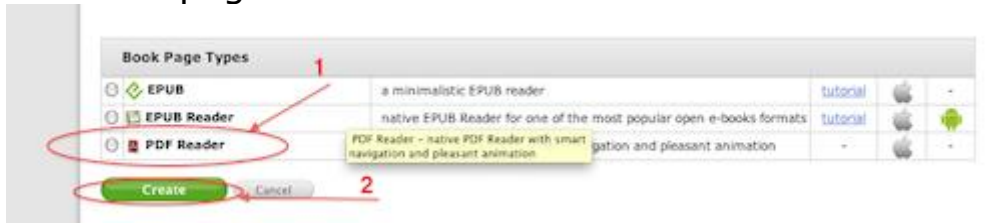


PDF Reader Page Type Tutorial

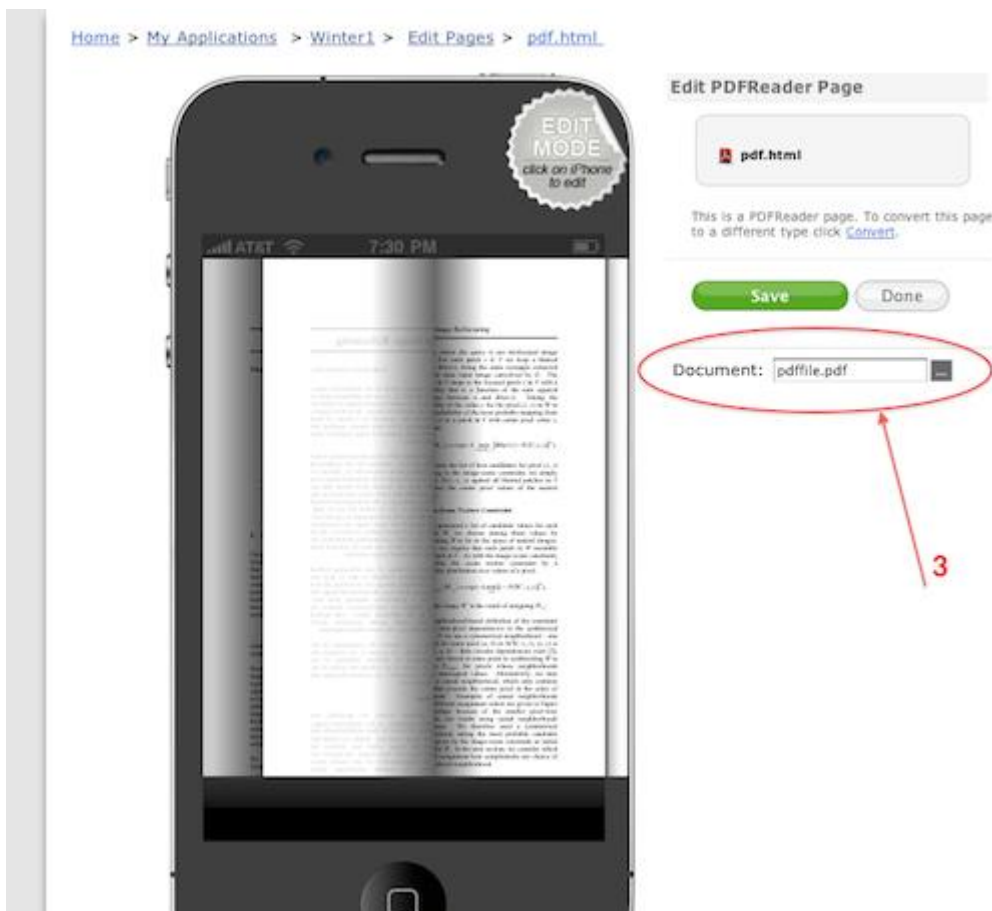
In order to add a PDF Reader page type you need to access your Application's Dashboard and go to "Edit pages" section. Click on Add New Page button, the "+" button below the list of the currently available pages.



1- Select the PDF Reader Page Type

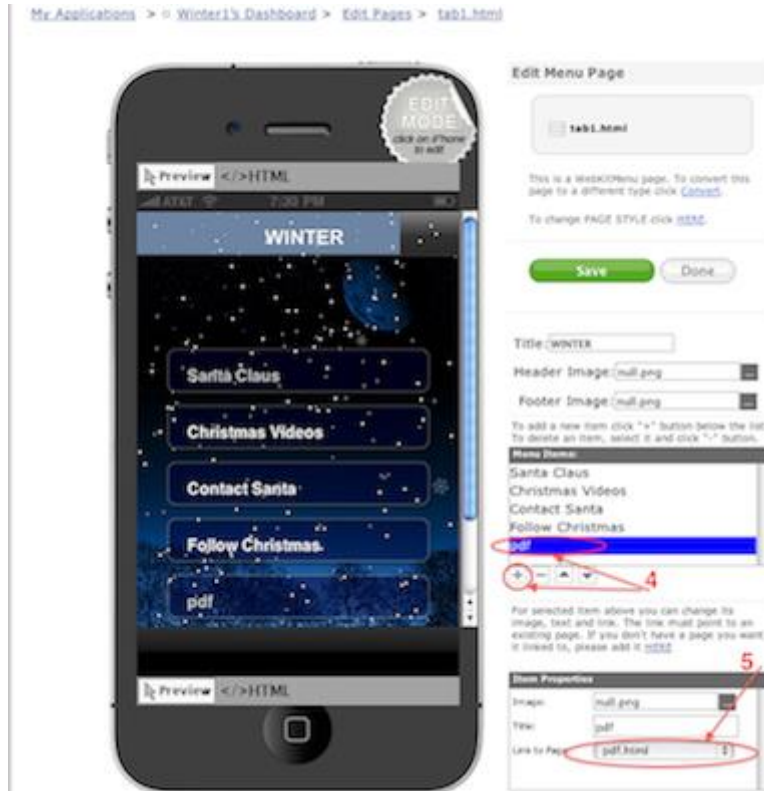
2- Press Create

After these steps a new PDF Reader page will appear in your application dashboard. In this page type you can upload the PDF file you want the users to be able to view in your application.



3 – Select the PDF file from the Resource Manager

Now you need to create a link to this page type within your application. This can be accomplished by adding a PDF Reader button linked to the PDF Reader Page Type.



4 – Add a new Menu Item in either of the Menu Type pages (in the example was used the Webkit Menu Page Type)

5 - Link the new created Menu item to the proper PDF Reader page that you have added in your application.

Note : The actual behavior of this page type will be visible either via the SeattleClouds Previewer Apps or in the actual application.

Here is the expected result :

Image Synthesis Considerations for Image Refocusing

Thomas Brown

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Abstract

Image refocusing from a single image is an underdetermined problem. One of those images of a scene that has captured high-frequency details that should appear in a refocused image. In this paper, we describe a system for incorporating additional focused images into the refocusing task in order to inform high-frequency details. We use the additional images to determine a mapping from low-frequency to high-frequency features, and then to define a space of natural images to which we constrain our solution. We find that the synthesized image accurately reproduces high-frequency features from the scene when the focused images capture the scene from the same view, but not from other angles of interest.

1. Introduction

Given an image in which some object appears out of focus, we would like to synthesize an image in which that object appears in focus. Since the image is a line integral of an object at a given depth in the projection of a pinhole camera, the image is a function of the camera's focal length. In this paper, we describe a system for incorporating additional focused images into the refocusing task in order to inform high-frequency details. We use the additional images to determine a mapping from low-frequency to high-frequency features, and then to define a space of natural images to which we constrain our solution. We find that the synthesized image accurately reproduces high-frequency features from the scene when the focused images capture the scene from the same view, but not from other angles of interest.

$$f \cdot g = k \quad (1)$$

where f is the sharp image and g is the PSF. The output image is some solution for f given g and k .

However, the modulation transfer function (MTF) of the Fourier transform of the PSF is a typical photography lens. This is not a significantly lower frequency when the image is out of focus than when it is in focus [1]. Thus a broad of spatial frequencies that should appear in a sharp image of the object is not present in the input. Refocusing from a single image is therefore an underdetermined problem, and as a result, deconvolution algorithms are diverse and highly tailored to their respective applications.

We present a system that incorporates additional focused images of the target object in order to inform

the high-frequency detail of the synthesized image. Following [2] and [3], we use the additional inputs to define a space of natural images to which we constrain our synthesized image. As in these papers, we implement this constraint as a library of local patches appearing in the input images, requiring that every patch in the synthesized image resembles some patch in the library.

Our system further differs from deconvolution in that we do not generate candidates for the synthesized image by finding global solutions for (1). Instead, we find for each local patch in the synthesized image a set of patches from our focused patch library that are likely to resemble that patch when convolved by the PSF. This is analogous to the local approach toward super-resolution in [4], in which the set of high-resolution patches in the library acts as a diverse library of candidate patches in the input image are considered. From this set of focused patches we choose a list of candidate values and corresponding gradients for the output pixel, which are then be selected from according to the natural image constraint.

The primary advantage of our refocusing method over deconvolution methods is that it does not require a precise strategy for recovering the lost high-frequency detail from the refocused image, but instead lets a probabilistic mapping from low-frequency features to high-frequency features be specified by the additional inputs. Our method should thus retain greater generality across applications than any one deconvolution algorithm.

In section 2, we describe the components of our method in detail. In section 3, we compare the results produced by different variations of our system. In section 4, we evaluate the results of our best system. In section 5, we conclude the paper and suggest future work.

2. System

In the previous section, we described how probabilistic constraints on the synthesized image are imposed by focused to sharp relationships and our natural image constraint. Ideally, we would like to construct the image which best satisfies the constraints across the entire image. In practice, we enforce the **diversity** of our search space by instead considering pixels



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