With the introduction of new technologies that require a photo with a high enough quality to be included in biometric databases used for facial recognition, photos will need to remove artifacts from their backgrounds to create consistent images of faces. Previously, colored backdrops were used to ensure noise was reduced from the photos. But this places significant limitations on the photos that can be used in the databases and the process to take said photos (i.e. cellphone cameras cannot be used). Ideally, software could be created to identify faces, remove backgrounds and produce a uniform virtual backdrop for the photo regardless of the composition of the original photo. One specific hurdle to overcome is that current algorithms can sometimes get confused with a person's hair and fill in the hair with the backdrop color instead of leaving the alone.

Our proposed approach to this project is two-pronged. First, we want to research current algorithms being used as well as if said current algorithms could be modified to accomplish the goal. Secondly, we want to design a high-level process that is streamlined, scale-able and secure for users to import pictures taken with any type of camera in any environment, manipulate them easily (like clicking a button rather than manually altering) and save a picture that meets the necessary specifications into the database.

The AAMVA (American Association of Motor Vehicle Administrators) is the governing body regulating driver’s license documents. According to AAMVA standards, the background for driver’s license photos is stated as:

Background. A uniform light blue color or white background shall be used to provide a contrast to the face and hair. Note: Preference is for uniform light blue color, such as Pantone 277 (though the specific Pantone color is not a requirement – a uniform light blue color or white background is a requirement).[[1]](#footnote-1)

An example photo from a driver’s license is shown in the below image.



A typical driver’s license station with the photo backdrop is shown in the below image.



When kiosks were introduced as a solution for citizens of the state of Iowa to be able to renew or replace their driver’s licenses without visiting a driver’s license station, certain limitations were required because of the backdrop functionality. The kiosk needs to have a standing or mounted backdrop behind the photo area to allow for the photo to have the required blue backdrop. A video showing the kiosks is located at this URL: <http://www.kcci.com/news/new-kiosks-let-you-renew-your-iowa-drivers-license/33374300>

In addition to the kiosks, the state of Iowa has recently introduced a pilot program to allow for mobile driver’s licenses. One of the suggested features has been allowing the user to take a photo from their device and use that as their driver’s license photo.

1. AAMVA 2013 CDS (Card Design Standards) http://www.aamva.org/WorkArea/DownloadAsset.aspx?id=4435 [↑](#footnote-ref-1)