Document a use case scenario for each of the vendors CelebSET APIs that would result in minimal bias when in use.

From the “Saving Face” article it looks like all three APIs (Microsoft, Amazon, and Clarifai) would be taking gender, age, and ethnicity into consideration.

<https://azure.microsoft.com/en-gb/products/cognitive-services/face> - Microsoft’s Azure Face service seems to be the most well rounded out of the three CelebSET API’s that considers gender, age, and facial detection. I would say the best use case scenario would be for law enforcement, but it looks like Microsoft does not want to be involved in law enforcement using their facial processing technology due to their Responsible AI practices.

<https://learn.microsoft.com/en-us/azure/cognitive-services/computer-vision/overview-identity>

<https://docs.aws.amazon.com/rekognition/latest/dg/what-is.html> - With Amazon’s Rekognition API the best use case that would result in minimal bias when used might be an instance where a video or image is captured throughout a diverse group of people. Amazon’s API was just barely worse than Clarifai’s facial detection, but was better at detecting gender and smile. A good use case might be in a photobooth based on the smile detection alone.

<https://www.clarifai.com/use-cases/facial-recognition> - The good use case for using Clarifai’s facial processing technology would be in the case of finding or locating a specific person in a crowded or heavily trafficked area. This is because in the article’s study it had the highest percentage of face detection. Clarifai would be best used to locate a missing person, track down a criminal (This is mostly because Microsoft won’t sell their services to police departments.), or find a celebrity in an arena.

As with Microsoft and Amazon a diverse set of images would need to be collected to train the facial recognition model, but with this use case there might be thousands of images of the specific person that is trying to be located. This could include identifying different parts of the face such as nose, mouth, and eyes, and facial expressions. The images used in machine learning model will help ensure that the model is not biased towards certain features.

Two major issues with Clarifai is that it has not been included in any of the prior audit studies, and when comparing celebrities the sample size is significantly lower than Microsoft’s list (10k for Clarifai to 100k for Microsoft).