17. Face Image Synthesis conditioned on Target Landmark Appearance

Supervisor Info
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Short Description
In this project students will build a generative model to predict facial appearance given the target facial landmarks and face identity. Potential application includes video dubbing and face performance capturing.

Long Description
Aim: In this project students will build a generative model to predict facial appearance given the target facial landmarks and face identity. Potential application includes video dubbing and face performance capturing.
Step1. Students will develop face tracking algorithm to capture face landmarks. This information will be used for training data acquisition and driven signals for face image manipulation during the test time.
Step2. Students will build GAN (Generative Adversarial Network) pipeline to predict facial appearance conditioned on face identity and expected facial landmarks. Video datasets will be used for training [1].
Reference:
1.   300VW dataset https://ibug.doc.ic.ac.uk/resources/300-VW/
2.   Triple consistency loss for pairing distributions in GAN-based face synthesis https://arxiv.org/pdf/1811.03492.pdf
3.   ReenactGAN https://wywu.github.io/projects/ReenactGAN/ReenactGAN.html