

Are you sure that generating fake signatures by a GAN would match fake signatures generated by humans, especially “forging” experts?

You could try to retrain the last layer of a pretrained CNN and add a layer at the beginning, which accepts two pictures: the original signature and the signature, which should be checked if it is forged or not and then train it on forged / non forged pictures.

If you really want to train a GAN, there are many good videos and guides, just google it.