

Natural Image Generation Systems Using Generative Adversarial Networks in Captcha

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ABSTRACT

On creating CAPTCHA images without using source images. The new CAPTCHA systems with natural images have been introduced into the real world. The CAPTCHA image generation systems use generative adversarial network (GAN) techniques to strengthen against CAPTCHA solvers. A GAN is an unsupervised machine learning process where generator and discriminator neural networks compete to produce zero-sum outcomes. The generator provides an output value to the discriminator whenever it receives an input value. Then, the discriminator calculates the difference between the received value from the generator and the original source data by using a loss function. To minimize this loss function, the generator adjusts its parameters and provides a different output value for the discriminator. As this process iterates, the output data from the generator approach to the original source data.

Keywords: CAPTCHA, GAN, unsupervised machine learning

