Abstract

The use of biometric technologies at airports is a promising area that will create technological, convenient and modern service for passengers. These technologies will significantly change the economic performance of airports and allow you to analyze data, increasing the speed, flexibility and efficiency of processes.

In this work, we consider the adaptive Wiener filtering of noisy images and image sequences. We begin by using an adaptive weighted averaging (AWA) approach to estimate the second-order statistics required by the Wiener filter. Experimentally, the resulting Wiener filter is improved by about 1 dB in the sense of peak-to-peak SNR (PSNR). Also, the subjective improvement is significant in that the annoying boundary noise, common with the traditional Wiener filter, has been greatly suppressed. The second, and more substantial, part of this paper extends the AWA concept to the wavelet domain. The proposed AWA wavelet Wiener filter is superior to the traditional wavelet Wiener filter by about 0.5 dB (PSNR). Furthermore, an interesting method to effectively combine the denoising results from both wavelet and spatial domains is shown and discussed. Our experimental results outperform or are comparable to state-of-art methods