SYNTHESIS OF IRIS IMAGES USING MARKOV RANDOM FIELDS
(ThuPmOR6)

Author(s): Sarvesh Makthal (West Virginia University, United States)
            Arun Ross (West Virginia University, United States)

Abstract: Of all the physiological traits of the human body that help in personal identification, the iris is probably the most robust and accurate. A number of iris recognition algorithms have been proposed in the literature over the past few years; however, not all of them have been tested on large databases. The largest known iris database has about 350,000 images in it but is proprietary. In this paper, a synthetic iris generation method based on Markov Random Field (MRF) modeling is proposed. The synthesis procedure is deterministic and avoids the sampling of a probability distribution and is, therefore, computationally simple. Furthermore, it is shown that iris textures in general are significantly different from other non–stochastic textural patterns. Clustering experiments indicate that the synthetic irises generated using the proposed technique are similar in content to real iris images.