

Image-Based Biometrics in Forensic Science

Borut Batagelj, Ph.D., Senior Lecturer of Computer and Information Science, Faculty of Computer and Information Science, University of Ljubljana, Slovenia.
E-mail: borut.batagelj@fri.uni-lj.si

Franc Solina, Ph.D., Professor of Computer and Information Science and Head of Computer Vision Laboratory at the Faculty of Computer and Information Science, University of Ljubljana, Slovenia.
E-mail: franc.solina@fri.uni-lj.si

The paper recounts various problems that the authors encountered in biometric face recognition and biometric image interpretation in their experience as court appointed expert witnesses. Before an automated face recognition system can be applied on a typical surveillance video, images must be enhanced using various image-processing methods or enriched by using computer vision 3D reconstruction methods. Authenticity of video material must also sometimes be verified. If face recognition is not possible or successful then other soft biometric characteristics can be checked. A legal expert witness for image biometry must be able to employ a large array of image processing and computer vision tools and methods. The expert witness must be able to explain how the biometric results were obtained, what the necessary processing steps were, and how confident the final results are.

Key words: expert witnesses, image biometrics, forensics, face recognition, identification, surveillance video, computer vision

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