

Chapter 11

Kinship Verification by Analysing Facial Images to Ensure Human Security

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ABSTRACT

Kinship verification involves determining the relatedness between individuals by analysing their genetic or phenotypic characteristics or traits. The realm of kinship research has garnered substantial attention particularly in computer vision, with broad applications spanning forensic analysis, genealogy exploration, immigration law and more. This chapter introduces a five-stage methodology for kinship verification through facial images, employing Convolutional Neural Networks (CNNs). The process involves dataset acquisition, preprocessing with FaceNet and Res-Net-50, feature extraction, and CNN model development utilizing Inception Resnet V1 and ResNet-50. The proposed model attains a remarkable accuracy exceeding 85% on a substantial dataset, showcasing its efficacy in identifying kinship relations. Thus,

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