

# Conference on Information Communications Technology and Society (ICTAS), 9-10 March 2023

## Biometric recognition of infants using fingerprints: Can the infant fingerprint be used for secure authentication?

Norman Nelufule, Yaseen Moolla, Sthembile Ntshangase, and Anton de Kock

Council for Scientific and Industrial Research (CSIR)

Information and Cybersecurity Centre (ICSC)

Meiring Naude Road, Brummeria, Pretoria, South Africa

Email: nnelufule, ymoolla, smlambo, [adkock2}@csir.co.za](mailto:adkock2}@csir.co.za)

<https://ieeexplore.ieee.org/document/10082749>

### Abstract

One of the first recognised and commonly used biometric modalities for men is the fingerprint, which is frequently used to register adults at home and in traffic centres. Fingerprint biometrics for babies, in particular, are not commonly used or approved. The infant recognition system discussed in this article is tested in infants as early as six weeks of age using a prototype infant fingerprint capture device. To compare and contrast the identification performance of the prototype fingerprint scanner with the traditional fingerprint scanner, the same error rates, standard deviations, and Failure to Acquire were calculated. The results of this investigation point to the possibility of registering newborns as early as six weeks using a baby's fingerprint.