

Compact, low-cost fingerprint reader could reduce infant mortality around the world

June 19 2019, by Pat Mroczek And Anil Jain



A team of MSU researchers created Infant-Prints – a low-cost, high-resolution and portable solution to accurately identify infants in an effort to help reduce infant mortality around the world. Credit: MSU

A team of Michigan State University researchers have created Infant-Prints—a low-cost, high-resolution and portable solution to accurately



identify infants in an effort to help reduce infant mortality around the world.

University Distinguished Professor of Computer Science and Engineering Anil Jain is leading a group of scientists from MSU and Dayalbagh, India, that will introduce Infant-Prints at two international conferences.

They presented at the 2019 Computer Vision for Global Challenges, sponsored by Facebook AI and in conjunction with the <u>IEEE</u> <u>Conference on Computer Vision and Pattern Recognition</u>, in Long Beach, California.

Additionally, Jain will chair an academic session on June 19 on Infant Biometrics at ID4Africa in Johannesburg, South Africa. ID4Africa is part of Africa's ID-4-All movement to develop digital identity ecosystems for improved humanitarian action and security.

Jain said Infant-Prints is a complete infant fingerprint recognition system with a low-cost, custom, high-resolution fingerprint reader, a new high-resolution, texture-based infant fingerprint matching algorithm and an Android application for verifying an infant's identity in real-time.

Children born in developing countries are subject to a lack of proper record keeping that prevents urgently needed health care and nutrition supplements to reduce <u>infant mortality</u>. By the age of five, more than 5 million children each year lose their lives to <u>vaccine-preventable diseases</u> alone, Jain said.

The lack of any official identification documentation makes it exceedingly difficult to identify and track at-risk infants. The complete system of a <u>high-resolution</u> (1900 ppi), low-cost (\$85) fingerprint reader and matcher running on a <u>mobile application</u> allows for accurate record



keeping and proper delivery of vaccination, health care and nutrition to infants. A biometric-based infant ID system is of immense interest to all the NGOs, international agencies and governments in least developed and developing countries around the globe, Jain said.

"Our goal is to transfer the Infant-Prints prototype to an organization for extensive evaluation and deployment in least developed and developing countries," he said. "Accurate and reliable recognition of infants will provide for effective delivery of critical vaccinations and nutritional supplements in time."

This next-phase work improves on earlier iterations by focusing on enrollment fingerprints of <u>infants</u> ages 0 to 3 months and then recognizing them after up to a year later.

More information: Infant-Prints: Fingerprints for Reducing Infant Mortality: arXiv:1904.01091 [cs.CV] <u>arxiv.org/abs/1904.01091</u>

Provided by Michigan State University

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