

## CSE Alum Plays Major Role in India's Unique Identity Project

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Salil Prabhakar (PhD CSE '01) has become a leading expert in biometric recognition and is playing a major role in a massive project in India that is considered the largest biometric project ever attempted. India is collecting face, fingerprint, and iris scans from each of its 1.2 billion people and assigning them a unique 12-digit ID number. In the past, millions of Indians could not access services, such as opening bank accounts or getting ration cards, because they had no proof of identity.

In order to plan and execute the project, India recruited technological experts of Indian origin from around the world, including Prabhakar, who was considered the biometrics specialist of the elite group. The Unique Identification Authority of India was established in August 2009.

At MSU while obtaining his PhD, Prabhakar was mentored by University Distinguished Professor Anil Jain; along with Jain and two other authors, Prabhakar wrote the Handbook of Fingerprint Recognition in 2003 (the second edition of the book was printed in 2009). According to Jain, "Salil showed a deep understanding and interest in fingerprint matching during his four years in our PhD program. The most popular method of fingerprint matching is based on minutiae points. Salil proposed an alternative representation scheme for fingerprint classification and matching based on fingercode. His two journal papers on this topic, published in 2002, have close to 1,000 citations. Other significant problems that Salil addressed during his stay at MSU included 'uniqueness of fingerprints' and 'similarity of fingerprints of identical twins.' Salil is internationally recognized as an expert in fingerprint matching, and he brings substantial visibility to Michigan State University."

Prabhakar is currently the chief scientist of DigitalPersona, Inc. in Redwood City, Calif. His research interests include pattern recognition, image processing, computer vision, machine learning, biometrics, data mining, and multimedia applications. He is co-author of 35-plus technical publications and has two patents. Prabhakar took periodic leaves from his company to help with the Indian project. Prabhakar also scouted other major ID and biometric projects around the world to provide input for the Indian project.

"It is gratifying to put my learning from MSU and DigitalPersona Inc. into practice on a national project with such wide and deep social impact," says Prabhakar. He and the other techno gurus worked from a rented apartment in Bangalore and put together the first designs of the entire system there. Indian Prime Minister Manmohan Singh kicked off the nationwide enrollment in late September, and the government hopes to issue the first 100 million unique ID numbers by March 2011, and 600 million within four years.

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