MISSOURI S&T **Distinguished Seminar Comp. Sci. Dept.** MISSOURI S&T

Can Biometrics Improve Security?

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Butler Carlton Building, Room 120

Abstract - It is commonly believed that biometrics when introduced in an authentication system can improve the overall security of the system. Based on a pattern recognition model of biometrics-based authentication system, we argue that when properly designed a biometrics-based authentication system can be highly secure. We identify several attack points in a biometrics-based authentication system and propose counter measures to thwart the attacks. With the improved awareness of the possible attacks, systems incorporating biometrics can be built with higher security.

Bio - Dr. Nalini K. Ratha is a Research Staff Member at IBM Thomas J. Watson Research Center, Hawthorne NY where he is the team leader for the biometrics-based authentication research. He is an adjunct professor at Cooper Union and NYU-Poly. He has over 20 years of experience in the industry working in the area of pattern recognition, computer vision and image processing. He received his B. Tech. in Elelectrical Engineering from Indian Institute of Technology, Kanpur, M.Tech. degree in Computer Science and Engineering also from Indian Institute of Technology, Kanpur and Ph. D. in Computer Science from Michigan State University. Before joining IBM Research, he worked at CMC R&D center and ECIL Computer Group both in India. He has authored more than 70 research papers in the area of biometrics and has been co-chair of several leading biometrics conferences and serves on the editorial boards of IEEE Trans. on PAMI and IEEE Trans. on SMC-B. He has co-authored a popular book on biometrics entitled “Guide to Biometrics” and also co-edited two books entitled “Automatic Fingerprint Recognition Systems” and “Advances in Biometrics: Sensors, Algorithms and Systems”. He has offered tutorials on biometrics technology at leading IEEE conferences and also teaches courses on biometrics and security. He is Fellow of IEEE, Fellow of IAPR and a member for ACM. His research interests include biometrics, pattern recognition and computer vision.