



Bio/Description

 unknown (b.)

An Indian-American computer scientist and educator whose primary contributions have been to the fields of machine learning and pattern recognition as applied to the domains of Document Image Analysis and Biometrics, he is the Vice President for Research and Economic Development (Interim) and a Distinguished Professor of Computer Science and Engineering, School of Engineering and Applied Sciences at the University at Buffalo, The State University of New York, (SUNY) in Buffalo, NY, USA. He is known for his groundbreaking work in handwriting recognition at the core of the first handwritten address interpretation system used by the US Postal Service. **He was also the prime technical lead responsible for technology transfer to Lockheed Martin and Siemens Corporation for deployment by the US Postal Service, Australia Post and UK Royal Mail.** The learning-based system that he developed as project technical lead along with his colleagues at the University at Buffalo helps save the USPS hundreds of millions of dollars by automatically processing, and barcoding for precise delivery, over 25 billion letters a year. This work was highlighted in the Computing Community Consortium's symposium on Computing Research that Changed the World in 2009 as one of the most successful applications of Machine Learning for developing a real-time engineered system. He has developed principled modeling approaches for pattern classification that have resulted in the development of robust, scalable systems in a variety of application domains, from document processing to biometrics. He has designed several algorithms for cursive handwriting recognition suitable for real time applications that demonstrated the benefits of innovative modeling of application constraints. His language-motivated hierarchical modeling has been extended to computer vision applications such as scene understanding and classifying activities and gestures in unconstrained videos. He has also made contributions to the theoretical foundations of a general fusion architecture and taxonomy of trained combining functions (classifiers) and their input parameters which provides a principled guideline for choosing a particular fusion technique. He also proposed one of the earliest model-based face recognition methods and developed a face matching system based on semantic descriptors. He proposed a hybrid facial feature localization method based on graphical models and image sampling and verified the individuality of facial expressions, demonstrating that either displacements of facial features or the frequencies of particular expressions could be used as biometric modalities. He invented methods for automated detection of deceit in facial expressions using changes in facial geometry, texture and changes in the eye movements. He received his undergraduate degree with honors (B.Tech.) in Computer Science from the Indian Institute of Technology (IIT) Kharagpur, India in 1986 and his Master's and Ph.D. degrees in Computer Science in 1988 and 1992 respectively from the University at Buffalo, The State University of New York, Buffalo, NY, USA. He is a Fellow of the Association for Computing Machinery, the IEEE (Institute of Electrical and Electronics Engineers), the AAAS (American Association for the Advancement of Science), the IAPR (International Association for Pattern Recognition), and the SPIE (International Society for Optics and Photonics). He is the recipient of the 2001 International Conference on Document Analysis and Recognition Young Investigator award, the 2004 MIT Global Indus Technovator Award, the Indian Institutes of Technology (IIT) Distinguished Alumnus Award (2014), and the 2015 IAPR/ICDAR Outstanding Achievements Award. In addition, he earned the 2010 IEEE Technical Achievement Award, "For pioneering contributions to Biometrics Systems". Since 1995 he has been the Associate Director of the Center of Excellence for Document Analysis and Recognition (CEDAR) and the founding Director of the Center for Unified Biometrics and Sensors (CUBS) since its inception in 2003. He is the author or co-author of numerous publications, the latest of which include: with S. Tulyakov, and C. Wu, "On The Difference Between Optimal Combination Functions For Verification And

Identification Systems”, International Journal Pattern Recognition and Artificial Intelligence, World Scientific Press, 24(2), 173-191 (2010); with Y. Zhou and I. Nwogu, “Labeling Spain with Stanford”, IEEE Transactions on Image Processing, IEEE Signal Processing Society Press, 22(12), 5362-5371 (2013); and with M. Malgireddy, and I. Nwogu, “Language motivated approach to action recognition”, Journal of Machine Learning Research, MIT Press, 14:2189−2212 (2013). He has also edited or co-edited numerous publications, the most recent of which are: Handbook of Statistics: Big Data, V. Govindaraju, Vijayraghavan, and CR Rao (eds.), Elsevier 2015 (in print); Handbook of Statistics: Machine Learning Theory and Applications, C. R. Rao & V. Govindaraju (eds.), Elsevier 2013; and Multibiometrics for Human Identification, B. Bhanu & V. Govindaraju (eds.), Cambridge University Press 2011. He has been awarded several patents for handwriting recognition and analyzation, including: US 5,515,455: "System for recognizing handwritten words of cursive script", V. Govindaraju; D. Wang; and S. Srihari, 1996; US 7,580,551. "Method and apparatus for analyzing and/or comparing handwritten and/or biometric samples", S. Srihari; V. Govindaraju; et. al. 2009; US 7,689,006: "Biometric convolution using multiple biometrics", V. Govindaraju; V. Chavan; and S. Chikkerur, 2010; and US 8,005,277: "Secure fingerprint matching by hashing localized information", S. Tulyakov; F. Farooq; S. Chikkerur; and V. Govindaraju, 2011. In addition, he has served on the editorial board of 10 journals including 3 IEEE transactions (IEEE-T-PAMI IEEE-T-SMC, IEEE-T-IFS) and IEEE Access. He has served as the Editor-In-Chief of the IEEE Biometrics Council Compendium and has been the General (Co)Chair at 12 conferences/workshops including International Conference on Document Analysis and Recognition (ICDAR), Program (Co) Chair in 14 conferences/workshops including Biometrics: Theory, Algorithms and Systems (BTAS). He has given over 100 invited talks, including as the invited speaker at the NRC Intelligence Committee Workshop on Science & Tech Investments where he presented on the topic of “Accelerated Discovery in the Era of Scientific Information Overload”. He has been on the Advisory Board of the Buffalo Niagara Enterprise, EngageClick Inc., Copanion Inc., and the International Graphonomics Society. He has served as President of the IEEE Biometrics Council (2015–2017). He has supervised the dissertation of 30 doctoral students.

 Courtesy of Wikipedia

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Noted For:

Co-Developer of handwriting recognition at the core of the first handwritten address interpretation system used by the USPS saving hundreds of millions of dollars

Category of Achievement:

Computer Scientist - Software/Mathematics (/achievement-category/computer-scientist-softwaremathematics)

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