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Computer Vision Research at Watson: From VeggieVision to PeopleVision

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TIME: Refreshments served at 2:45 pm with talk to follow

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SPEAKER
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Computer Vision Research at Watson: From VeggieVision to PeopleVision

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Computer Vision, the science of recognizing patterns in visual imagery has a wide range of applications. This talk presents an overview of projects at the Exploratory Computer Vision Group in the IBM Watson Research Center. I will briefly describe our work in automatic object recognition (VeggieVision), automatic video indexing for broadcast (VideoVista), and audio-visual speech recognition. The focus of the talk will be around Biometrics and Video Surveillance.

In Biometrics, I will present our work on finger print matching, including acquisition, feature extraction and finger print verification. Anonymous biometrics is an effort to build technical solutions to the privacy and security challenges that arise from the wide spread use of biometrics. Large scale biometric matching explores the use of feature based indexing techniques to address the accuracy and performance issues that arise in 1 to many matching.

PeopleVision is a project that is exploring the use of camera based object detection, tracking and classification as the basis for building Smart Surveillance Systems. These systems are capable of automatically monitoring physical spaces to provide a variety of functionalities like real-time behavioral alerts, automatic event based retrieval, event pattern analysis. Smart surveillance systems have applications in a wide range of markets including Homeland Security, Retail, Travel and Transportation and Healthcare.

Bio:

Dr. Arun Hampapur manages the Exploratory Computer Vision Group at the IBM T.J. Watson Research Center. The Exploratory Computer Vision Group is a 10 member team with PhD's from the top universities in the world. The team currently has two thrusts, video surveillance and biometrics technologies. At IBM since 1997, Dr. Hampapur is one of the early researchers in the field of Multimedia Database Management. Dr. Hampapur obtained his PhD from the University of Michigan in 1995. Before moving to IBM he was leading the video effort at Virage Inc (1995 – 1997). At IBM Research in addition to several research projects, Dr. Hampapur served as a design consultant for the CNN Video archive system, a joint project between IBM and Sony. His role as an indexing technology expert included developing a technology adoption map for the customer and vendor qualification. Dr. Hampapur now leads an Adventurous Research project called PeopleVision. PeopleVision explores several aspects of understanding people and their actions using camera based tracking. The technology developed in the PeopleVision project is currently being commercialized in the surveillance domain as the IBM Smart Surveillance System (S3). He has published more than 40 papers on various topics related to media indexing, video analysis, and video surveillance and holds 8 US patents. He is also active in the research community and serves on the program committees of several IEEE International conferences. He also served on an NSF review panel for small business innovation research. Dr. Hampapur is an IEEE Senior Member.