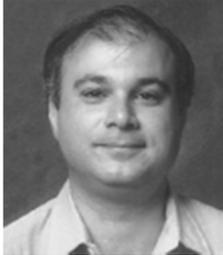# From Imaging Data to Useful Visual Information and Measurements

Speaker: Jacob Scharcanski, Federal University of Rio Grande do Sul

In this talk, we address the problem of extracting relevant information from image data. We also introduce briefly the concepts and techniques often used in the automatic interpretation of phenomena based on imagery, or to make inferences based on models of such imagery data.

When modeling and representing imaging measurements, usually we are trying to describe the world (or a real world phenomenon) using one or more images, and reconstruct some of its properties based on imagery data (like shape, texture or color). Actually, this is an ill-posed problem that humans can learn to solve effortlessly, but computer algorithms often are prone to errors. Nevertheless, in some cases computers can surpass humans and interpret imagery more accurately, given the proper choice of data representations (i.e. features), as we discuss in this talk. In order to illustrate this presentation, several applications are discussed, focusing in areas such as medicine, biometrics, pulp and paper, soil sciences, porous media, surveillance, and human-machine interfaces.

About the speaker: Jacob Scharcanski is an Associate Professor in Computer Science at the Federal University of Rio Grande do Sul (UFRGS), Brasil. He holds a cross appointment with the Department of Electrical Engineering at UFRGS, and also is an Associate Adjunct Professor with the Department of Systems Design Engineering, University of Waterloo, Ontario, Canada. He has authored and co-authored over 100 refereed journal and conference papers, and has contributed to several books on imaging and measurements. In addition to his academic publications, he has several technology transfers to the private sector. Presently, he serves as an Associate Editor for two journals, and has served on dozens of International Conference Committees. Professor Scharcanski is a licensed Professional Engineer, Senior Member of the IEEE, IEEE Multimedia Signal Processing TC Affiliate Member, and serves as Chair of the Technical Committee TC-17 (Materials in Measurements). His areas of expertise are Computer Vision, Imaging Measurements and their Applications.