

International Conference on Significant Advances in Biomedical Engineering

April 27-29, 2015 Philadelphia, USA

Information fusion in the context of bio-medical engineering applications-A panoramic view

Belur V Dasarathy

Information Fusion and Decision System Technologies, USA

This presentation will start with an overview of multi-sensor, multi-source information fusion that has developed as a discipline in its own right over the past couple of decades. During this period, its role has rapidly expanded beyond the original defense and robotics arena to embrace a wide variety of application domains. This includes bio-medical applications such as diagnosis, treatment planning, and monitoring using medical imagery fusion technologies. The talk will briefly survey the many promising areas of application of information fusion concepts and techniques that fall within the purview of bio-medical engineering, the main theme of this conference. Prominent among these is the area of medical imaging which has progressed well beyond the stage of preliminary inquiry. Indeed, as discussed in a recently published survey, there have been over 300 studies reported in this area alone. Accordingly, the rest of the talk will focus on these extensive developments made in exploiting the potential of information fusion technology to enhance the quality of medical diagnosis, and care provided to patients with a variety of serious medical issues, such as cancer of various organs, Emergency/ ICU care, and the like. The talk will be structured to bring out the various imaging modalities as well as fusion methodologies that have been successfully deployed together in delivering reliable and effective patient care. It should be noted that these semi-autonomous technologies are designed to aid and assist the qualified medical professional to ensure thoroughness in the evaluation of all the available information, some of which may at first glance be even contradictory. The main thrust of these approaches is therefore to exploit to the fullest extent the synergy of information that can be extracted from multiple sensors and sources including past experience in dealing with similar case scenarios.

Biography

Belur V Dasarathy, an IEEE Fellow is an internationally known expert in the field of information fusion and is currently a consultant in this field. He is the founding editor in chief of the *Information Fusion Journal* and served in that capacity for more than a decade starting from its initiation until 2014. He has nearly 200 publications in various areas of interest and has authored three books published by IEEE Computer Society. He has won several awards including the IEEE Millennium Medal 2000, IEEE Region 3 Engineer of The Year 1997, etc. He has been keynote speaker at more than two dozen international conferences over the past decade. He has been the organizing chair of dozens of conferences for SPIE in the areas of information fusion, data mining, and related topics.

Fusion-consultant@ieee.org

Notes: