

Information Fusion as Aid for Qualitative Enhancement of Intelligence Extraction in Multi-source Environments - A Panoramic View of Architectures, Algorithms and Applications

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Abstract. This invited talk highlights the positive role of information fusion in distributed sensor networks. The presentation will begin with a brief introduction to the twin topics namely, sensor networks and information fusion. This is followed by an overview of how the objectives of the former can be aided by the advancements in the latter domain. This will include a brief overview of sensor network characteristics, its taxonomy, and performance metrics followed by a parallel overview of the field of information fusion. This will lead into the delineation of the role of information fusion in meeting specific objectives of sensor networks. Next, a global, flexible Information fusion architecture model that maximizes the overall opportunity for synergistic exploitation of sensor network potential in terms of the objectives that are aided by the fusion process will be presented and discussed in greater detail. This architecture conceives the fusion function as an input-output process that can be embedded at various points (nodes) in the hardware/software system underpinning the sensor networks.

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