

Complex Information Processing

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Summary

It is commonplace nowadays to claim that information is everywhere and that, as a result, finding the right information (mathematically : according to a set of criteria optimizing a specific goal) is very difficult. Defence applications have to cope with similar problems : communication networks, surveillance and information systems transmit and generate significant amounts of complex information which cannot be processed with low level algorithms. The challenge is to build high-level processing units (which demand a lot of computing power) so as process video streams and communication packets with little possibility of a false alarm as automatically as possible. Methods for processing, aligning, merging low-level and high-level information (from syntactic to semantic information) extracted from still images, videos, speech, text and the Internet are being considered. The framework includes theoretical approaches, algorithms as well as evaluation methods. Topics of interest are data fusion, learning techniques, data mining, HCI, even Artificial Intelligence. Defence applications are numerous, from scene understanding to weak signal detection.

Bibliography

Jacques Blanc-Talon is the Head of the Scientific Domain "Information Engineering and Robotics" at the Office for Advanced Research and Innovation (MRIS) at the DGA (Direction Générale de l'Armement). He is the Signal Processing Chapter Chair for IEEE France, member of the GdR ISIS and at the Board of the SEE SI2D Club (see <http://www.viadeo.com>). He is the cofounder and Chairman of the conference Advanced Concepts for Intelligent Vision Systems (ACIVS) : <http://acivs.org>.