Potentials of Computational Intelligence for Big Multi-sensor Data Management

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Abstract. Due to the important development in Hardware technologies, sensors are everywhere. So, many real-world applications in different domains (such as Defense, Industry, Transport, Energy, Surveillance, Climate and Weather, Healthcare) use multi-sensors to collect tremendous amounts of data about their states and environments. Such data are inherently uncertain, erroneous and noisy on the one hand, and voluminous, distributed and continuous on the other hand. One of the major challenges the Governments, Industry, Companies and Organizations have to face today is how to manage and make sense of Big sensor data for the purpose of decision making. Recent advancements in science and technologies (like Computational Intelligence and Machine Learning) are opening the road to more advanced analytics techniques that can allow for the sensor data characteristics and extract useful insights. This allows building solutions that provide fast time responses and less resources consuming. In this talk, we show how techniques stemming from the recent Computational Intelligence field can contribute to the above solutions to manage and handle Sensor data. Some examples from the aeronautic/space domain are used to motivate our propositions.