Editorial: Towards fast-data and smart cloud computing

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M. Sivabalakrishnan is currently working as an Associate Professor in the VIT University, Chennai. He has more than 18 years of experience in teaching. In VIT, he is involved in many research and development activities. He has also organised many national/international seminars/workshops/symposiums/ conferences/special sessions in the area of video analytics, cloud computing and big data. His areas of research include video analytics, computer vision, human computer interaction and big data. He completed his PhD CSE and ME CSE from the Anna University. He has published many national/international articles in conferences, journals and books.

Layth Sliman completed his Diploma in Computer Engineering. Then, he obtained his Master's in Computer Science in information Systems in INSA Lyon-France and then his PhD from the INSA Lyon, in collaboration with the University of the Ryukyus, Japan. He underwent training in development and implementation program in computer software applications in CMC-TATA. In the same year, he also underwent another training in information and communication technologies in MEIO University and Okinawa International

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Cloud computing involves web-based, distributed, shared and configurable pools of physical and virtual computing resources. Cloud computing has been spreading for many years under different models, including software as a service, platform as a service and infrastructure as a service.

After more than ten years of cloud computing emergence, we are now beyond dealing with computing power and storage in heterogeneous environments, resources virtualisation; services consumed on demand, simulation and other grid and cloud computing technologies. We need to deal with new issues related to massive datasets or big data. Actually, with the appearance of Web 2.0, internet of things, and smart cities we face new challenges and opportunities as we have enormous ubiquitous volumes of volatile and unstructured data generated everywhere.

From business point of view, big data is an opportunity at a mass scale. In fact, with billions of users, sensors and applications providing data and conducting actions, many new business 'services' can be proposed. For instance, using data analytics, the generated data can be used to improve business processes, energy consumption, to ensure physical safety or to enhance user experience. However, achieving such objectives requires dealing with volatile data and online streaming analytics to handle real-time (or at least 'near real-time') data along with historical data.

We need to design new 'application oriented' cloud computing solutions that enable continuous processing and real-time statistical analytics of all sort of data stemming from multiple sources.

In conclusion, I would say: as far as cloud computing is concerned, further than processing power and storage capabilities, big data puts much more constraints on processing time, response time and toning between data streams features and the appropriate processing resources and techniques.

In this special issue: man-machine interaction is an integrative field of research that covers many aspects of science focused on a human and machine in combination. Basic goal of the study is to improve and invent new ways of communication between users and computers, and many different subjects are involved to reach the long-term research objective of a perceptive, natural and multimodal way of interaction with machines. The rapid evolution of the methods by which humans interact with computers is observed nowadays and new approaches allow using computing technologies to support people on the daily basis, making computers more usable and receptive to the user's needs.

This monograph is the special issue in the series and presents important ideas, current trends and innovations in the man-machine interactions area. The aim of this book is to introduce not only hardware and software interfacing concepts, but also to give insights into the related theoretical background. Reader is provided with a compilation of high-quality original papers covering a wide scope of research topics divided into eleven sections, namely: human-computer interactions, robot control, embedded and navigation systems, data analysis and mining, biomedical signal processing, image and sound processing, decision support and expert systems, rough and fuzzy systems, pattern recognition, algorithms and optimisation, computer networks and mobile technologies and data management systems.

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Our special thanks go to the Editor-in-Chief and his entire Inderscience team for their continuous support. Sincere thanks to the Inderscience Publisher for such great opportunity.

Finally, as editors of this special issue, we would like to congratulate all the authors, reviewers and journal staff, for the realisation of this work. Each of them contributed to the making of a collection of research papers that, in our opinion, represents a step forward in the research on man machine interface, big data and cloud computing challenges.