INVITED SESSION SUMMARY

Title of Session: Knowledge-based Information Systems Engineering in Optimizing Future Enterprise Applications

Name, Title and Affiliation of Chair: Shastri L Nimmagadda and Neel Mani

Details of Session (including aim and scope):

Enterprises are continuously dealing with complex business data systems, and business leaders are keenly aware of the vast potential of the unstructured data, whether it comes from their customers or internal and/ or external sources. The smart enterprises are constantly looking for solutions to address the business challenges in practical ways and effective means. The unstructured data that mostly come from sensors, geospatial sciences, social media, blogs, documents, emails, images, and videos are heterogeneous and multidimensional. It is challenging to represent them in different digital media and knowledge domains. Because of varieties and volumes of data, by traditional and conventional systems, it is difficult to integrate and obtain useful information in new knowledge domains.

The session focuses on many common research areas for business enterprises, where machine learning and Big Data techniques have delivered valuable results in cloud computing environments. Some of the challenging issues will be analysed and evaluated in preparation of complex analytics solutions that involve the unstructured data, with expectations and possible choices. The session will expect the data decision makers to equip better and tap the wealth of new knowledge, available on their servers and businesses with unsure data systems that otherwise support data analytics with decision support business information systems.

For a complete introduction to the research area, it is recommended to track the list of themes presented at **http://kes2019.kesinternational.org/**. It includes *Deep Learning, IoT, and Cloud Computing, Fog Computing or relating to Data Space for Bit-Coin, Block Chain, Crypto-currency, Mining or other Digital/Data Technology, combinational and discrete optimizations*. The session aims at addressing such issues in practical and theoretical perspectives.

The themes are not limited, but including the following topics:
- Domain Application in Intelligent and Smart system with IoT, Deep learning, cloud & Fog Computing
  - (a) Agriculture and Environment
  - (b) Smart City
  - (c) Energy Systems
  - (d) Green Information Systems
  - (e) Sustainability Research
  - (f) Healthcare System
  - (g) Logistics & Supply Chain Systems
- Enterprise architecture
- Data Warehouse
- Cloud computing and reuse
- Micro-services, container and Docker applications and reuse
- Service-oriented architectures
- Multi-Agent Systems

- Sensor systems
- Business process models and application
- Big data analytics, development, applications
- Big data and its role in ecosystems' analysis
- Big-data analytics and business intelligence
- Data modelling methodologies
- Data integration and warehousing – big data focus
- Data mining, visualization and interpretation – big-data focused
- Knowledge mapping and adding values to projects and services
- Customisable and configurable language
- Data mining/warehousing reuse process
- Exploratory/ knowledge-based data analysis
- Optimisation of Data analysis and application
- Cognitive and ambient intelligence
- Big Data driven Block Chains of Supply Chains
- Big Data guided Digital Ecosystems & Technologies
- Combinatorial and Discrete Optimizations

Main Contributing Researchers / Research Centres (tentative, if known at this stage):

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