

---

## Editorial

---

### Youness Tabii\*

Ecole Nationale des Sciences Appliquées de Tetouan (ENSA Tetuan),  
 BP: 2222 M'hannech, Morocco  
 Email: youness.tabii@gmail.com  
 Email: youness.tabii@uae.ma  
 \*Corresponding author

### Hamid R. Arabnia

Department of Computer Science,  
 The University of Georgia,  
 415 Boyd Graduate Studies Research Center,  
 Athens, Georgia 30602-7404, USA  
 Email: hra@cs.uga.edu

### Abdelkarim Erradi

College of Engineering,  
 Qatar University,  
 C07-132, Women's Engineering Building,  
 Qatar  
 Email: erradi@qu.edu.qa

**Biographical notes:** Youness Tabii received his PhD in July 2010 from the National School of Computer Sciences and Systems Analysis, Mohammed V University-Rabat. He is a Professor at the National School of Applied Sciences of Tetuan (ENSATé). He is a member in New Technology Trends Team (NTT Team) and the Head of Master: Embedded and Mobile Systems. His research interest includes video processing and analysis, also interested by cloud security. He is the Founder and Chair of International Conference on Big Data, Cloud and Applications (BDCA). He is a Guest-Editor of the *International Journal of Cloud Computing* in 2016.

Hamid R. Arabnia received his PhD in Computer Science from the University of Kent (Canterbury, England) in 1987. He is currently a Professor of Computer Science at University of Georgia, where he has been since October 1987. His research interests include supercomputing, big data analytics and applications in medical imaging, security and surveillance, and prevention of cyber-harassment and cyber-bullying. He is the Editor-in-Chief of *The Journal of Supercomputing*. He has received a number of awards, including 'Outstanding Achievement Award in Recognition of His Leadership and Outstanding Research Contributions to the Field of Supercomputing' (presented to him by IEEE at Harvard University Medical School); 'Distinguished Leadership and Visionary Award' (presented by FTRA Association); 'Distinguished Research Award for his Outstanding Contributions to Adaptable Communication Systems' (presented by ACM SIGAPP IMCOM). He has published extensively; he has authored 180 research publications and has edited 120 research books.

Abdelkarim Erradi is an Assistant Professor in the Computer Science and Engineering Department at Qatar University where he teaches and conducts research in the area of computer science, with specific interests in autonomic computing systems, self-managing systems, cloud security and cybersecurity. He has several funded research projects in these areas. He has authored several scientific papers in international conferences and journals. He received his PhD in Computer Science from the University of New South Wales, Sydney, Australia. Besides his academic experience, he possesses 12 years professional experience as a Designer and a Developer of large-scale enterprise applications for leading corporations in Australia.

---

The first paper entitled 'Hybrid approach-based support vector machine for electric load forecasting incorporating feature selection', by Malek Sarhani, Abdellatif El Afia and Rdouan Faizi. The objective in this work is to investigate

the importance of applying the feature selection approach to remove the irrelevant factors of electric load. To this end, they introduce a hybrid machine learning approach that combines support vector machine (SVM) and particle

swarm optimisation (PSO) in both continuous and binary forms. Specifically, the binary hybridisation is used for feature selection and the continuous one is used for ELF. Experimental results demonstrate the feasibility of applying feature selection by SVM and PSO algorithms without decreasing the performance of the forecasting model for ELF.

The second paper ‘Throughput enhancement of a novel hybrid-MAC protocol for M2M networks’, by P.K. Verma, R. Verma, A. Prakash, and R. Tripathi. In this paper, authors propose a novel hybrid-MAC protocol for a densely deployed M2M network. This protocol mainly consists of a contention interval (*CI*), and a transmission interval (*TI*). During *CI*, all the active M2M devices contend for the channel access, following *p*-persistent carrier sense multiple access (CSMA) protocol. After contention, the successful devices win timeslots in *DTI*, following time division multiple access (TDMA) mechanism.

The third paper entitled ‘CityPro: city-surveillance collaborative platform’, by Mohamed Dbouk, Hamid Mcheick and Ihab Sbeity, propose an integrated platform to gather multiple existing systems in a city. The platform consists of a collaborative surveillance system, called CityPro. The proposed architecture is intended to protect and monitor people and public infrastructures, such as bridges, roads, buildings, ..., etc. It is designed to deal with and prevent abnormal activities like terrorist attacks. CityPro is expected to operate in live-mode by using the city digital-infrastructures. At the end of this paper, a typical case study is given, and challenges and future works are also discussed.

The last paper is ‘NoSQL databases for big data’, by Ahmed Oussous, Fatima-Zahra Benjelloun, Ayoub Ait Lahcen and Samir Belfkih. NoSQL solutions have been created to respond to many issues encountered when dealing with some specific applications, e.g., storage of very large datasets. In fact, traditional RDMS ensure data integrity and transaction consistency. But, this is at the cost of a rigid storage schema and a complex management. Certainly, data integrity and consistency are required in many cases like in financial applications but they are not always needed. The goal of this paper is to establish a precise picture about NoSQL’s evolution and mechanisms as well as the advantages and disadvantages of the main NoSQL data models and frameworks. For this purpose, first, a deep comparison between SQL and NoSQL databases is presented. Many criteria are examined such as: scalability, performance, consistency, security, analytical capabilities and fault-tolerance mechanisms. Second, the four major types of NoSQL databases are defined and compared: key-value stores, document databases, column-oriented databases and graph databases. Third, we compare for each NoSQL data model the main available technical solutions.