Guest editorial

Special issue on next generation of pervasive computing and IoT systems

The pervasive computing and internet of things (IoT) communities examine similar problems and face similar challenges. Some might argue that pervasive computing focuses more on HCI issues, while IoT focuses more on connecting the devices, yet both communities share largely overlapping technical interests and goals.[AQ2] Both are interested in issues beyond just technology, such as privacy, security and ethics and both are pursuing similar use cases. Ebling, thus, encourages the two communities to join forces and work together to achieve common goals.

Today, the infrastructure needed to support pervasive computing and the IoT faces unprecedented challenges as entirely new classes of applications and systems emerge. For example, pervasive systems designed to augment human cognition with tasks such as face recognition must operate at "superhuman speeds," delivering insights to help with human decision-making within very strict and narrow time limits. Similarly, the emergence of pervasive video analytics demands the processing of very large volumes of video data in near-real-time. In general, the field of pervasive computing is rapidly changing in the face of major advances in sensing, data processing techniques and wearable computing. The articles collected in this special issue:

- The IoT-based smart irrigation system designed with various sensors to collect farm field data and stored all the data in the cloud for scheduling the irrigation *(Mannar Mannan J et al.)*;

- Proposed novel feature selection approach in combination with the machine-learning algorithm which can early predict the chronic disease with utmost accuracy *(Hegde, S et al.)*;

- The purpose of this paper is to provide performance analysis for four-state tandem open queue network and a governing equation is formulated with the help of a transition diagram *(Priya, B et al.)*;

- The novel approach in this paper is used to study the hybrid ABC-DT classifier and compare the performance against three well-known classifiers such as PSO-KM, SVM and K-NN *(Jesuretnam, J.B et al.)*;

- The reticulum perception is that the methods which examine and determine the scheme of contact on unearths toward the number of dangerous and perchance fateful interchanges occurring toward the system *(Sreeram, G et al.)*;

- The security levels of the proposed model are compared with the existing models and provide a better performance using the Key Distribution Centre *(Anbu Malar et al.)*;

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- This paper aims to predict the traffic and helps to find a solution. Unpredictable traffic leads to more vehicles on the road. The result of which is one of the factors that aggravate traffic congestion *(Dumka et al.)*;
- This paper aims to find the optimal path using directionally driven self-regulating particle swarm optimization with high accuracy and minimal response time *(Thirugnanasambandam et al.)*;

- This paper is to classify the states of Markov chain to support the practice of this type of password in the direction of effective authentication for secure communication in cloud computing *(Vaithyasubramanian et al.)*; and
- The implemented MBIST architecture includes a modified SRAM structure, a modified address generator and comparators, which operate based on the MBIST control signal and the modified March Y algorithm *(Nisha et al.)*.

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