Editorial

We are pleased to release the first issue of the **Digital Signal Processing and Artificial Intelligence for Automatic Learning.**

The domain Artificial intelligence has strong interrelations with many other sub-domains and the developments in the other sub-domains have influence over Artificial Intelligence and they contribute to the growth of Artificial Intelligence. One such application is the Digital Signal Processing. Hence, we realize its importance and bring out this journal.

The first issue is characterized by the below described research. In the opening paper on "**A Parallel Version of the Jade Algorithm using GPUS**" by *Adriana Mexicano, Jesus C. Carmona, Nelva N. Almaza, Lilia Garcia and Ricardo D. Lopez*, a parallel implementation of JADE is outlined. To achieve it, they have developed an algorithm for which they used Compute Unified Device Architecture (CUDA). The results were obtained by the use of "Speed-*up*" and the authors have shown that the execution run-time can be reduced significantly by the use of CUDA. Further they observed the benefit can be observed better when working with large amounts of data.

Zaynabe RAGALA, Asmaa RETBI and Samir BENNAN in their paper on "**An Approach Based on Time-Series and Neural Networks for Safety Railway Incident Prediction**" have described the fluidity of the rail network being able to be disrupted by equipment breakdowns. They tested the VAR model and the LSTM with several outputs; the latter gives satisfactory results with an accuracy rate of 92% and an RMSE of 0.006. The authors addressed the problem of classification of the nature of failures.

In the next paper on "**Reliability Ratio Weighted Bit Flipping– Sum Product Algorithm for Regular LDPC Codes**", the authors *Chakir Aqil, Abdelaziz Ahaitouf, IsmailcAkharraz* have proposed a new algorithm called Reliability Ratio Weighted Bit Flipping–Sum Product (RRWBFSP) decoding for low-density parity-check codes. In the performance evaluation through simulation the authors found that the new algorithm achieved a 0.34 dB performance gain over of the standard Sum-Product decoding algorithms.

Omar BOUAZIZI ENSA and *Abdelmalek Essaadi* in their paper on "**A Survey on Deep Learning Models Based Road Object Detection Inference**" have presented a comparative study of the object detection accuracy and speed of various state-of-the model for the road scene context. During the implementation they found that the one-stage detectors are stronger in terms of prediction speed, while two-stage models are stronger in terms.

In the last paper on **A Novel Defect Classification Scheme Based on Convolutional Autoencoder Skip Connection in Semiconductor Manufacturing**, the authors *Jaegyeong Cha and Jeong* have viewed that detecting and classifying defects on wafers can help engineers address the root cause of defects and improve yield. To achieve it, they proposed a convolutional autoencoder using skip connection for wafer map defect classification. During the testing they found that the loss of the model was successfully reduced with skip connection, and improved performance was obtained by reusing the encoder.

We do hope that these papers strongly add to influence the digital signal processing on artificial intelligence. We will come out with more research in the next issues.

Editors