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Editorial

It would be difficult to find many areas of science and engineering in which over the last 5–10 years there has been a lot of promise for the real use of tools, techniques, and prototype software. However, in data analysis, users, practitioners and researchers have been benefiting from fast developments and commercialization of new tools and prototypes. This has occurred in several directions, among which are: product development, product integration, product customizing, and consulting. Many domains and industry sectors have benefited as well. Examples are: finance, manufacturing, medical/pharmaceutical, retail, and banking. This is definitely rewarding for researchers who are working in the field of Intelligent Data Analysis and the IDA journal is a good example of where these researchers are disseminating the results of their work.

Volume 3(4) of IDA consists of four articles that reflect some of the most recent work in this field. In the first article, Potamias introduces a concept learning algorithm that utilizes mathematical programming and constraint satisfaction techniques to uniformly represent and manage both data and knowledge. The article contains some results related to solutions of a constraint satisfaction process. The author also shows the performance of the algorithm on some real-world domains and compares that with other algorithms such as C4.5 and CN2.

The second article by Bakhtazad et al. is about recovery of useful process information from noisy data. The authors propose a novel method based on coefficient de-noising and use of wavelet transform. Simulation results are given highlighting the advantages of de-noising over classical approaches that are based on mean square error.

In the third article, Silipo et al. present a brain tumor investigation problem through classifying ElectroEncephaloGraphic (EEG) signals. Their approach consists of applying a non-linear analysis method to the hidden dynamic of EEG signals. They apply minimum Markov order method to rest EEG records of six patients to discover possible brain tumors. The results have been very encouraging and may in the future become a helpful tool for characterizing and discriminating different brain conditions, based on brain signals.

The last article by Frieß and Harrison presents a new neural network algorithm that minimizes the least-mean-squared cost function. Their method is based on use of function operators to map the training points into a high-dimensional non-linear space. The method has shown high performance in tasks such as one-dimensional curve fitting, system identification, and speech processing.

And finally, we see the contents and presentation of articles as our best asset in this field. We love to hear from our reader community and we are always trying to publish the best articles. Send us your feedback and we will work on it.

A. Famili

Editor-in-Chief