Editors' Introduction

WELCOME to the first issue of the Internetworking Indonesia Journal in 2013. This issue carries three papers from the 2nd IEEE Conference on Control, Systems & Industrial Informatics (ICCSII), which was held in Bandung, Indonesia in June 2013. The remaining two papers are the regular papers received by the IIJ.

The first paper covers a project on a client and server system that provides weather predictions to its end-user. As may be evident to the readership of the IIJ, a weather reporting and prediction system is valuable to many developing nations, particularly those with a considerable agrarian sector. The paper looks at the management of high-resolution weather data, with the aim of improving the dissemination of information. The paper proposes the use of a web-based data inquiry/access solution which is accessible via mobile devices. The implementation uses the numerical weather prediction model as the basis for obtaining high-resolution predictions. The project was implemented using open source software in order to reduce development costs.

The second paper reports work done at the Royal Institute of Technology (Department of Industrial Production) in Sweden. In broad terms the work seeks to include manufacturing information (typically stored in CAD/CAM systems) into Discrete Event Simulation, by using ISO 10303 Application Protocol 214 (STEP AP214). The aim of the work is among others to improve data management architectures for capturing, structuring, storing and exchanging process specifications.

The third paper reports on a project in Indonesia which seeks to make Intellectual Property (IP) information more accessible to mobile devices. This is due to the fact that the many islands in the country are not as yet connected to the Internet backbone of Indonesia. Hence, mobile phones and smartphones are the main client-side system available to the majority of people in Indonesia. The paper presents a number of interesting background data regarding the IPR applications received by the various branch offices of the Directorate General for IPR in Indonesia. In itself the paper represents an interesting snapshot of efforts to provide digital services to the public in Indonesia using the available technologies, in this case mobile devices.

Robotics is the topic of the fourth paper, which belongs in the regular section of this journal issue. A mobile robot is designed using an artificial neural network-based controller (or neurocontroller), which allows it to learn adaptively. The neurocontrollers of interest are those which evolve according to the determined genetic algorithm. Here the chromosome of each individual neurocontroller is defined to be the binary weights of the connections, while the fitness function is a simple rule for obstacle avoidance behavior. Prior to programming into the mobile robot, the best neurocontroller behavior is analyzed and selected through computer simulation. Although the chromosome is simple and only encodes the weight connections, the simulated evolution of the neurocontrollers has produced a neurocontroller that possess the obstacle avoidance behavior. The best neurocontroller simply controls the mobile robot to rotate left whenever the front and sides sensors detect an obstacle. Only after the obstacle is at the back of the mobile robot would it then move forward away from the obstacle. An important finding is that the three rear distance sensors are actually not important for the mobile robot to possess the obstacle-avoidance behavior.

The last paper in this journal issue reports on some problems and solutions pertaining to the roll-out of Wi-Fi services within a campus dormitory. The authors found that some user behavioral patterns affected the over performance of the Wi-Fi performance, and sought to develop some models to explain in greater clarity the problems faced.

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