DEVELOPMENT OF AN INTEGRATED WEB-BASED APPLICATION FOR FOREIGN EXCHANGE FORECASTING USING RECURRENT NEURAL NETWORK AND GENETIC ALGORITHM

Name : M. Akmalul ‘Ulya
NRP : 5208 100 095
Departement : Information System FTIf-ITS
Supervisor : Prof. Ir. Arif Djunaidy, M.Sc, Ph.D Retno Aulia Vinarti, S.Kom, M.Kom

Abstract

Foreign exchange forecasting method that combines academic and practitioner perceptions have been implemented by combining a modified recurrent neural network and a genetic algorithm to obtain the forecasting results having high profit with low error. This forecasting method which is known as Optimization Profit Error Foreign Exchanger (OPE-Forex) was proven of giving better accuracy rate in compared to other methods employing a neural network or a modified recurrent neural network only. However, OPE-Forex application that was built in Matlab and some other software has not been goatherd into an integrated application.

This final project is aimed to build an integrated web-based application for OPE-Forex in order to enable users easier in operating the OPE-Forex. The application which was implemented using J2EE and MySQL DBMS was designed in a modular fashion. Four main modules are created to form an integrated application; i.e., the modified recurrent neural network, genetic algorithm, a module for updating dataset, and a module for handling dataset. Such a modularly-designed application is primarily aimed to ease its future development.
The integrated web-based OPE-Forex application that was successfully developed in this final project has been tested using the validation and modularity feature tests. The result of validation tests showed that the application gives identical forecasting results in compared to those obtained from the previous application. Meanwhile, results of modularity feature test proved that the application can be modularly configured easily.

**Keywords:** foreign exchange forecasting, J2EE, web-based applications, modular.