



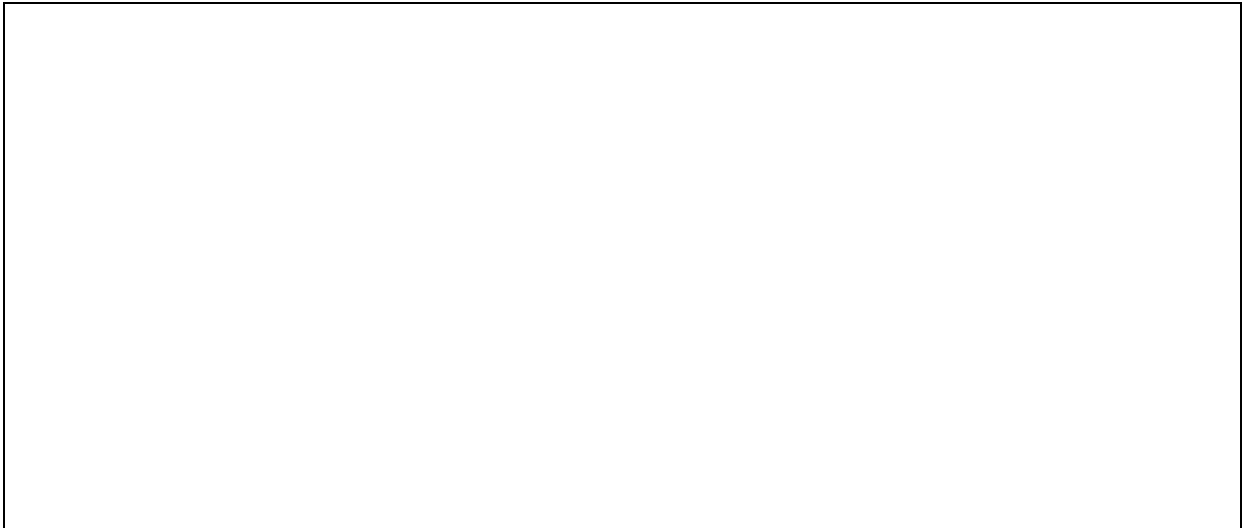
Extract

A Sustainable soft-computing platform

Development Plan

for

Open Source World Challenge 2011



Registration No.	2011-
Program title	USM Extract

1. Program Overview

Artificial Neural Networks (ANNs) are computerized models that resemble the human nervous system, with algorithms consisting of weighted interconnecting processing units (just like neural map of the human brain). To address a particular problem using ANNs, the inter-related connections (known as weights) between processing units are adjusted according to some learning rule. ANNs are useful for undertaking pattern recognition tasks, which offer benefits of solving practical problems in a variety of domains including business, medical, and engineering world.

1.1. Development goals (background, aims etc.)

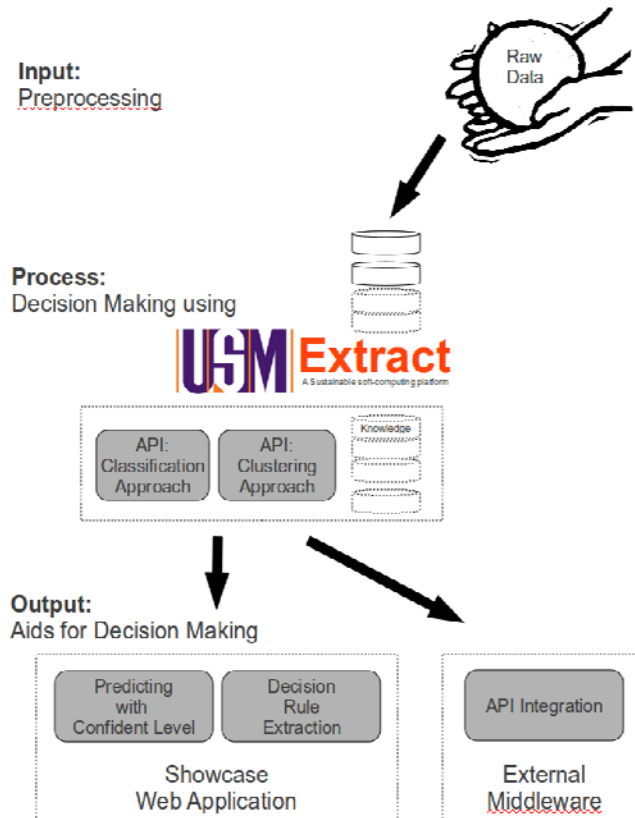
Proper data preprocessing, architecture selection, and network training algorithms are required in order to reap the best from utilization of ANNs. USM Extract comprises models and algorithms in an open source web application environment, specially configured for offering optimized ANN-based solutions for practical applications. In this regard, USM Extract alleviates the arduous task of optimizing ANNs for solving real-world problems. Certain ANN parameters are optimally set while others can be fine-tuned manually. The main aim is to allow users to fully utilize the benefits of ANNs without the need to acquire the knowledge of a rocket scientist.

1.2. System configuration

- Fedora / Ubuntu / CentOS / Windows

- JavaSE Runtime Environment 6
- 300MB free hard drive space
- 4GB RAM

1.3. Menus



Graphic source: www.usm.my, <http://www.openclipart.org/detail/1089/earth-in-gentle-hands-by-liftarn>

1.4. Language & Tool used for development

- Oracle JavaSE 6 Development Kit, available at www.oracle.com/technetwork/java/index.html
- Eclipse IDE, available at www.eclipse.org

1.5. Systems used and Tested in

- Fedora 8, 9, 10, 11, 12, 13
- Ubuntu 9.04, 10.04, 11.04
- CentOS 4, 5
- Microsoft Windows XP, 7

1.6. Plan for each development stage

- Year 2011
 - Web 2.0 ready with IceFaces (www.icefaces.org)
 - Switch prototype from commercial to Open Source RDBMS (MySQL Community Server version 5.1, available at www.mysql.com)
 - Switch prototype from commercial to Open Source web application server (Apache Tomcat Web Application Server version 6, available at tomcat.apache.org)
 - Preload and testing with data sets from UCI Machine Learning Repository (archive.ics.uci.edu/ml/)
 - Equip with advanced ANN algorithms for solving
 - Classification problem: FuzzyARTMAP, Fuzzy Min-Max
 - Clustering problem: Fuzzy Min-Max
 - Enroll for competition “Open Source World Challenge 2011”
 - Release as a GPL based project in <http://java.net>

1.7. Number of personnel input and work assignment

- Choo Jun, Tan
- Chee Peng, Lim

1. Long-term prospects of the program developed (No specific form is required.)

USM Extract provides the best-of-breed ANN technology in educational research-based Application Programming Interface (API) for enhancing the quality and performance of ANN-based solutions. USM Extract provides ANN models to be infused into real-world software products to achieve optimal solutions to solve specific problems, yielding numerous returns in terms of best results, enhanced values, and competitive edge. USM Extract provides the best-of-breed ANN technology in educational research-based Application Programming Interface (API) for enhancing the quality and performance of ANN-based solutions. USM Extract provides ANN models to be infused into real-world software products to achieve optimal solutions to solve specific problems, yielding numerous returns in terms of best results, enhanced values, and competitive edge.