On Rough Multi-Level large Scale Fractional programming problem

A Thesis Submitted to the Degree of PhD to Information System Department,
Faculty of Computers and Information, Helwan University

Presented By
Mostafa Thabet Mohammed Mabrouk

Supervised by:

Prof. Dr. Mohamed Omran

professor of operations research
Department of Mathematics,
Sadat Academy

Prof.Dr. Osama EzeldinEmam

Professor of Information Systems,
Department of Information Systems
Faculty of Computers and Information,
Helwan University

2017

١

Abstract

Text classification is a process toclassify documents into specific categories based on their content. It is an automated rule of a language texts to predefined categories. Text classification is considered to be the main requirement of text retrieval systems, that retrieve texts in response to a user query.

This thesis presents a new method in text classification for large scale systems, the concept based on combining different classification methods with enhancement to reach optimal results with high accuracy and performance, a multilevel large scale model has been created to help in achieving such goal.

Existing techniques in learning algorithms for classifying text need enough documents to learn accurately. This thesis presents an algorithm based on rough set for the automatic grouping of PDF documents, and with potential application for Web document classification.

a Large-Scale three level fractional problem is considered with random rough coefficient in objective function, in order to solve this problem, The intervals technique used to convert rough nature in objective into equivalent crisp , Then Tailor Series transformation is used to convert the Large-Scale three level fractional to an equivalent three level linear programming problem , then a Traditional Method used to constructed solution of the three- level programming problem, then we will use Decomposition Technique to solve Large-Scale Problem.

In this thesis we have combined naiveBayes approach as a classification method with a mathematical model to solve the complexity of the system by solving a large scale multilevel fractional programming problem