شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HANAA ALY

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

HANAA ALY

Ain Shams University
Faculty of Science
Department of Mathematics

"Numerical Weather Prediction models and climate data interpretation using data mining techniques."

A Thesis Submitted to Department of Mathematics– Faculty of Science – Ain Shams University in Partial Fulfillment of the Requirements of the Award of the Ph.D. Degree in Applied Mathematics.

By

Marwa Farouk Mohamed Ali

Supervised by

Prof. Dr.: Mohamed Ahmed Mohamed Hassan El-Arabawy
Prof. of Applied Mathematics – Mathematics department – faculty of science – Ain shams university.

Prof. Dr. Mohmed Magdy Abd Al-Wahab
Prof. of Meteorology –Astronomy and Meteorology department- faculty of science – Cairo University.

Dr. Somaya Abd AL-Hamed Ahmed Mohamed
Lecturer of computer science – Institution of technology in 10th of Ramadan.

2021

Acknowledgement

First, I thank Allah the Almighty for giving me the strength and the ability to complete this thesis. Many thanks to my family who patiently encouraged and supported me to finish this work.

My Sincere thanks and real indebtedness are dedicated to my supervisors Prof. Dr. Mohamed Hassan El-Arabawy, Prof. Dr. Mohmed Magdy Abd Al-Wahab and Dr.Somaya M.Asklany, for their constructive guidance throughout the development of the work. The opportunity I had to share in their boundless vision, enthusiasm and advice is something for which I shall always be profoundly grateful, Dr. Zeinab Salah, for giving me feedback and for her support as research on this thesis; and Dr. Maha Harhash, for her support and patience. Without their guidance and advice this thesis would not exist. A special thanks should be presented to Prof.Dr.Fayez Nasif for his precious notes and guidance. It is pleasure to express my great thanks to Mathematics department, Faculty of Science, Ain Shams University for giving me this opportunity.

List of published papers

1- Ali, M. F. M., Asklany, S. A., Abd El-wahab, M., & Hassan, M. A. ,Data Mining Algorithms for Weather Forecast Phenomena: Comparative Study. *IJCSNS*, *19*(9), 76, (2019).

2- Ali, M. F. M., Asklany, S. A., Abd El-wahab, M., & Hassan, M. A., A comparison of Three Boundary Layer schemes for Numerical Weather Prediction. *Appl.Math.inf.Sci.14,No.6*, *1-9*, (2020).

Contents

List of figures

List of tables