

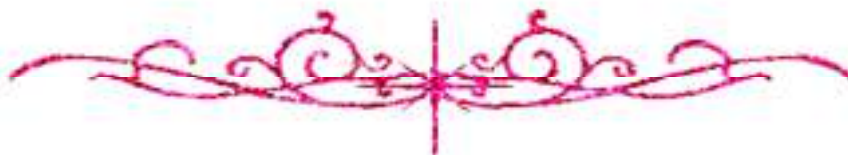
Safaa Mahmoud



بسم الله الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني



Safaa Mahmoud



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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





Ain Shams University

Women's College of

(Arts, Science, and Education)

Department of Mathematics

Alternative Methods for Detecting Outliers in Circular Data

A THESIS

SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS

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IN

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MATHEMATICAL STATISTICS

BY

IKHLAS IBRAHEEM DIAB AL-AWAR

Department of Mathematics

WOMEN'S COLLEGE

Ain Shams University

SUPERVISORS

Prof. Dr. Samia S. Al Azab

Prof. of Applied Mathematics

Women's College

Ain Shams University

Dr. Bothaina S. Hamed

Associate Prof. of Pure Mathematics

Women's College

Ain Shams University

Dr. Hazem I. El Shekh Ahmed

Assistant Prof. of Mathematics Statistics

Faculty of Science

Al-Quds Open University of Gaza

Dr. Ali H. Abuzaid

Assistant Prof. of Mathematics Statistics

Faculty of Science

Al-Azhar University of Gaza

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Women's of College

(Arts, Science, and Education)

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Thesis Supervisors:

Prof. Dr. Samia S. Al Azab

Prof. of Applied Mathematics

Women's College

Ain Shams University

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Associate Prof. of Pure Mathematics

Women's College

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Faculty of Science

Al-Azhar University of Gaza



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Women's of College

(Arts, Science, and Education)

Department of Mathematics

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Presented by

IKHLAS IBRAHEEM DIAB AL-AWAR

Demonstrator

Department of Mathematics

For

The Degree Ph.D. In Science

SUPERVISORS

Prof. Dr. Samia S. Al Azab

Prof. of Applied Mathematics

Women's College

Ain Shams University

Dr. Bothaina S. Hamed

Associate Prof. of Pure Mathematics

Women's College

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Dr. Hazem I. El Shekh Ahmed

Assistant Prof. of Mathematics Statistics

Faculty of Science

Al-Quds Open University of Gaza

Dr. Ali H. Abuzaid

Assistant Prof. of Mathematics Statistics

Faculty of Science

Al-Azhar University of Gaza

Approval stamp

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Approval of Faculty Council

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/ /

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/ /

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

DEDICATION

To

My Parents Zainab and Ibraheem

My Brothers Diab and Loay

My Sisters Marwa, Sarah and Hadeel

My Sister's Daughter Bayan

My Sister's Husband Mohammed

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