شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قَسَــــم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of 15 – 25c and relative humidity 20-40 %

بعض الـوثـــائق

الأصـلية تـالفـــة

بالرسالة صفحات

لم ترد بالأصـــل

GAUSSIAN MIXTURE MODELING VERSUS AUTO ASSOCIATIVE NEURAL NETWORK FOR ANALOG CIRCUITS FAULT DIAGNOSIS

By

Mohamed Ahmed Abo El Soud Abo El Magd
B.Sc. in Electronics and Communications Engineering – Cairo University

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
Master of Science
in
Engineering Mathematics

Supervised by
Dr. Mohamed A. El-Gamal
Professor, Dept. of
Engineering Math. & Physics,
Faculty of Engineering,
Cairo University.

Faculty of Engineering, Cairo University
Giza, Egypt
July 2006

B

٨٨٤١

Gaussian Mixture Modeling Versus Auto Associative Neural Network for Analog Circuits Fault Diagnosis

By

Mohamed Ahmed Abo El Soud Abo El Magd
B.Sc. in Electronics and Communications Engineering – Cairo University

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
Master of Science
in
Engineering Mathematics

Approved by the Examining Committee:

Prof. Dr. Mohamed G. Darwish — Member

Prof. Dr. Hany L. Abdel-Malek — Member

Prof. Dr. Mohamed A. El-Gamal — Thesis Main Advisor

Faculty of Engineering, Cairo University
Giza, Egypt
July 2006

ACKNOWLEDGEMENTS

I would like to express my gratitude to all those who helped me to complete this thesis. I extend my sincere gratitude and appreciation to my supervisor, **Prof. M. A. El-Gamal**. *I could not have imagined having a better advisor and mentor for my Master. He conducted a lot of fruitful discussions and has been a source of inspiration and encouragement. He also provided me with a lot of references that were very essentials for the completion of this work. He spend a lot of efforts guiding me through the writing of the thesis, correcting and revising every thing.I want also to add that I enjoyed every conversation between me and him. He is a very good person indeed.*

Special thanks to the stuff members of the department of Engineering Mathematics & Physics for their support and encouragement to complete this work in an appropriate way. I mention Prof Adel Mohsen for his continuous and enthusiastic *help. He really has assisted me in numerous ways*

Finally, I am forever indebted to my parents, my brother, and my sister for their understanding, endless patience and encouragement when it was most required. To them I dedicate this thesis. I am also grateful to all my friends for their support.

TABLE OF CONTENTS

LIST OF TABLES

Table 6.13. The mean and variance of the classification accuracy of 10 Monte Carlo runs for the combined voltage/current measure.