بسم الله الرحمن الرحيم

قال تعالى :

رَبِّ أَوْزِعْنِي أَنْ أَشْكُرَ نِعْمَتَكَ الَّتِي أَنْعَمْتَ عَلَيَّ وَعَلَى وَالِدَيَّ وَأَنْ أَعْمَلَ صَالِحًا تَرْضَاهُ وَأَدْخِلْنِي بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ

صدق الله العظيم

(سورة النمل 19)

DEDICATION

This work is sincerely dedicated to:

My Father’s Soul

My Mother

My Brothers& Sisters

My Husband

My Family & Friends

And all the loved ones

For all those times you stood by me

For all the joy you brought to my life

For every dream you make come true

For all the love I found in you…..

I’ll always be grateful and thankful

I feel blessed because I have you…

I wish you can sense my deepest love an utmost appreciation

ACKNOWLEDGMENT

Firstly I kneel on my knees in affirm faith to **ALLAH** for helping and strengthening me throughout my life gradually till I reached this point.

Then, I would like to express my deep gratitude and thanks to the one who gave me his precious time, his witty suggestions, his utmost care and patience **Dr. AbdElrasoul G. Elzubaidy** who supervised this thesis until it was finally accomplished.

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Abstract

Need for signal processing and filtering are as old as electronic engineering itself, but recent developments in telecommunications, multimedia, and modern warfare have pushed design requirements to before unknown levels. Quest for more bandwidth, better sound definition and better video compression has fuelled significant new developments in filter designs. Starting point for any aspiring electronic engineer is learning to use industry-standard MATLAB software package and exploring its numerous uses in signal processing and filter design.

Here MATLAB is used to design one of the most needed digital filters nowadays, the Moving Average filter the design is built based on characteristic equations and Z-transform.

الخلاصة

ضرورة تنقية ومعالجة الإشارات هي بقدم الهندسة الالكترونية نفسها، ولكن التطورات الأخيرة في الاتصالات السلكية واللاسلكية ، والوسائط المتعددة ، والحروب الحديثة دفعت لشروط التصميم قبل مجهولين. البحث عن المزيد من عرض النطاق الترددي، وأفضل صوت وأفضل تعريف الفيديو غذى ضغط كبير التطورات الجديدة في ترشيح التصاميم. نقطة الانطلاق لأي مهندس يطمح هو التعلم الإلكتروني لاستخدام معايير الصناعة MATLAB واستكشاف حزمة البرامج العديدة يستخدم في تنقية ومعالجة الإشارات وتصميم. هنا MATLAB تستخدم لتصميم واحد من أكثر الأيام تحتاج فلتر رقمي ، والمتوسط المتحرك فلتر تصميم مبني على أساس الخصائص المعادلات وتحويل زد.

Sudan University of Science and Technology

College of Graduate Studies

Moving Average Filter Design Using MATLAB

تصميم مرشح ر قمى متحرک باستخدام الماتلاب

A thesis submitted in partial fulfillment of the requirements for the degree of M.Sc in Electronics Engineering (Communication)

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