شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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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

TEXT EXTRACTION AND ENHANCEMENT FROM IMAGERY FILMS AND NEWS

By

Hossam Ahmed Fadel Elshahaby

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
Electronics and Communications Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Approved by the
Examining Committee

_____
Prof. Dr. Mohsen A. Rashwan, **Thesis Main Advisor**

_____
Assistant Prof. Dr. Omar A. Nasr, **Internal Examiner**

_____
Prof. Dr. Khalid M. El Sayed, **External Examiner**

Faculty of Computers and Information, Cairo University

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2021

Engineer's Name: Hossam Ahmed Fadel Elshahaby
Date of Birth: 03/02/1988
Nationality: Egyptian
E-mail: hossam.elshahaby@gmail.com
Phone: +20 111 654 22 55
Address: Mohandessen, Agouza, Giza

Registration Date: 01/10/2014
Awarding Date: 2021
Degree: Master of Science
Department: Electronics and Communications Engineering

Supervisor:
Prof. Mohsen Rashwan

Examiners:
Prof. Mohsen A. Rashwan (Thesis Main Advisor)
Dr. Omar A. Nasr (Internal Examiner)
Prof. Khalid M. El Sayed (External Examiner)
Faculty of Computers and Information, Cairo University

Title of Thesis:

Text Extraction And Enhancement From Imagery Films And News.

Key Words:

Text Detection and Text Recognition; Edge Features; Multiple Frames Integration; Films videos; Computer Vision.

Summary:

This research solves problems of text detection, verification, segmentation, and enhancement in text imagery applications like news and films. Recent approaches are applied in an efficient way. In news videos, locating multiple captions is done using edge detection by grayscale-based and color-based techniques. Stationary as well as moving captions across frames are automatically classified as horizontal or vertical motion using combinatory techniques of recurrent neural network and correlation-based technique. The Convolutional Neural Nets (CNNs) is used to verify the caption as a caption containing text for further processing. In films, several CNNs are implemented to detect frames containing text with high accuracy. Error handling and correction algorithm are applied to resolve classification problems. Multiple frames integration technique is used to extract inserted text in graphics and enhance it. The Correctly Detected Characters (CDC) overall average weighted accuracy for news text recognition using Autoencoder Neural Network (ANN) is 96.07% while the CDC average weighted accuracy for films text translation is 97.79%.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.
I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Hossam Ahmed Fadel Elshahaby Date: / / 2021

Signature:

Dedication

I would like to dedicate my thesis to my parents and sister for supporting and encouraging me during my Master's degree.

Acknowledgments

Firstly, I would like to thank God for helping me and facilitating all obstacles out of my hand until this research is finally finished successfully. Next, I would like to thank the RDI team for supporting me with their experience and data set used in my research. Special thanks to Professor Dr. Mohsen Rashwan for his contribution with several ideas which I used to solve the problem of caption detection and enhancement from images as well as empowering me during the whole period of research.

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