UNIVERSITY OF ZAGREB
FACULTY OF ELECTRICAL ENGINEERING AND COMPUTING

MASTER THESIS num. 000

Image Colorization Methods

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MASTER THESIS ASSIGNMENT

Student: **Adi Čaušević**

Title: **Image Colorization Methods**

Description:

Greyscale or 8-bit images take up significantly less memory space compared to RGB images that use 24 bits. Sometimes greyscale images are the only thing available, e.g. in the case of historical photographs. Image colorization is a process in which colours are reconstructed using original grayscale image.

Within the thesis study and describe image colorization methods. Special attention should be paid to methods based on soft computing, such as the use of neural networks (today typically deep models). Implementations of at least three different state of the art methods have to be trained and evaluated. The thesis should encompass the source code and other relevant material for recreating the results. The results have to be explained, supported with arguments. The used literature has to be cited and the obtained help acknowledged.

I agree with publishing the final version of the thesis in electronic form on the website of the Faculty of Electrical Engineering and Computing, University of Zagreb, as well as in the public Croatian Digital Thesis Repository of the National and University Library.

Mentor:

Prof. Dr. Peter Peer

Assoc. Prof. Dr. Marko Čupić

Ovo je zahvala

CONTENTS

1. Introduction

Ever since the advent of photography in the early 19th century people had the urge to add color to photographs. Not long after the invention of the daguerreotype by Louis Daguerre in 1839, the Swiss painter and later photographer Johann Baptist Isenring produced the first colored photographic image by hand-applying pigments to the surface of a monochrome photograph. Although first experiments with color photography date back to the middle of the 19th century, hand-coloring monochrome photographs was the easiest method to produce full-color photographic images until the arrival of color film in the mid-20th century.

- The fascination with hand colorization has died down - Reemerged in the early 2000 (statistical models, descriptions...) - Significant progress with convolutional networks - Modern

1.1. Image Colorization

- Task description - Given a monochrome image ... - First attempts with

1.2. Previous work

1.3. Use Cases

2. Conclusion

Conclusion.

BIBLIOGRAPHY

Image Colorization Methods

Abstract

This is the abstract

Keywords: Keywords.

Naslov

Sažetak

Sažetak na hrvatskom jeziku.

Ključne riječi: Ključne riječi, odvojene zarezima.