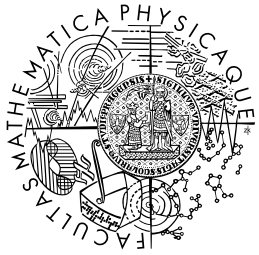

FACULTY
OF MATHEMATICS
AND PHYSICS
Charles University

BACHELOR THESIS

Ekaterina Lipina

Image Colorisation

Department of Theoretical Computer Science and Mathematical Logic

Supervisor of the bachelor thesis: Mgr. Martin Pilát, Ph.D.
Study programme: Computer Science (B0613A140006)
Study branch: IPP5 (0613RA1400060009)

Prague 2023

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Dedication.

Title: Image Colorisation

Author: Ekaterina Lipina

Department: Department of Theoretical Computer Science and Mathematical Logic

Supervisor: Mgr. Martin Pilát, Ph.D., Department of Theoretical Computer Science and Mathematical Logic

Abstract: Colorization ia a well-known image-to-image translation problem, however most of the existing algorithms focus on only one type of images - either photographs or hand-drawn images. Hand-drawn images, such as sketches or comics, have a distinct visual style and unique features compared to photographs, making it difficult for existing algorithms to work efficiently on both.

This thesis analyzes the properties of current methods for image colorization, mainly focusing on Convolutional Neural Networks (CNNs) and Generative Adversarial Networks (GANs). For both methods we train and evaluate models on different types of datasets. The results are compared according to the quality of their outputs. Using obtained information, we propose a new image colorisation method, which produces eligible output for all types of gray-scale images. We also present an application written in Java, where it is possible to try different methods for image colorization on grey-scale images.

Keywords: key words

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An example citation: Anděl [2007]

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Bibliography

J. Anděl. *Základy matematické statistiky.* Druhé opravené vydání. Matfyzpress, Praha, 2007. ISBN 80-7378-001-1.

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A. Attachments

A.1 First Attachment