ANIMAL CLASSIFICATION

Machine Learning

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Abstract

This intermediate report documents the development of an animal classification AI using a more "old-school" approach of Visual-Bag-of-Words models. These models, and thus the AI, are developed in Python-based Jupyter Notebooks accompanied with this document. This animal classification AI was developed as a fulfillment of the Machine Learning course requirements.

Part I discusses the accompanied code in general. Section 1.1 explains which files are accompanied and which are the most important. Section 1.2 describes the ideology used to created the code. To make testing multiple models easier, a *pipeline* was created and is discussed in section 1.3.

Finally, part II discusses future plans for this project. Section 2.1 lists possible topics that can be explored to create a better animal classification AI. In the last section, section 2.2, some open issues are discussed.

Contents

Part I

About the code

1.1 Files included with this report

TODO XXX

1.2 Ideology of the developed code

TODO XXX

1.3 A typical pass through the pipeline

TODO XXX

1.4 Technical remarks

This report was created in LaTeX by modifying the excellent and well-known VUB themed template from Ruben De Smet (2020). BibLaTeX was used for reference management and natbib was used for more citation control.

Most source files, for this report and the created models, are available on GitHub (Bontinck, 2020). Some files, like the used training images, were not included in this GitHub repository. Details about this can be found on the GitHub page (README file). The supplied code is written in Python-based Jupyter Notebooks. Rights to this GitHub repository can be asked from the author.

Part II

What's next

2.1   Further development

Due to limited time available this intermediate report and the current state of the project isn't overwhelming in any stretch of the imagination. Because of this, a special thanks is given to the teacher and teaching assistants who've softened the requirements for the intermediate report.

In the time available until the final deadline many new possibilities for creating a better model will be explored, this might include but is not limited to:

- TODO XXX

Some aspects of the created models and pipeline might also be modified further once the open issues discussed in section 2.2 are resolved.

2.2   Open issues

While developing the first models many questions arose. Most are already answered by googling or discussion with colleagues. Open questions that are not yet answered are listed below, for which guidance from the teaching assistants is asked.

- TODO XXX

Figures

The most notable figures are included in this list. They're high resolution thus zooming in the PDF should be viable to get a clearer view.

References

Bontinck, L. (2020). *Machine learning project* [GitHub commit: Todo]. Retrieved December 11, 2020, from https://github.com/VUB-CGT/ml-project-2020-pikawika

De Smet, R. (2020). *Vub latex huisstijl* [GitHub commit: d91f55799abd390a7dac92492f894b9b5fea2f47]. Retrieved November 2, 2020, from https://gitlab.com/rubdos/texlive-vub