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**Hochschule für Technik
und Wirtschaft Berlin**

University of Applied Sciences

Text Detection in Natural Scene Images

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Module: Computergrafik und Bildverarbeitung

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Abstract

To be edited at a later date.

Contents

1   Introduction

Text is arguably one of the most essential form of communication. According to Long et al. (2020):

> *"As the written form of human languages, text makes it feasible to reliably and effectively spread or acquire information across time and space. In this sense, text constitutes the cornerstone of human civilization."* (Long et al. 2020)

In the modern world, text as a medium of communication is not only consumed by humans but has claimed its place in the world of technology. However, text detection in natural scene images is proven to be challenging. Compared to detecting text on handwritten materials, the randomness of a natural scene is a big hurdle to overcome. This paper begins by observing the kinds of interference which are absent on structured text (e.g: handwritten and printed notes) but are prominent in natural scenes. It then presents an overview on the how text is detected using both CRAFT and EAST. Subsequently, the performance review of the algorithm will be presented, which is obtained by testing the preferred method on both structured and unstructured text.

2   Structure of the Network

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3   Foundations

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4   Section about quotations

In this section, an example for a literal quotation is given.

> *"A persona is a rich picture of an imaginary person who represents your core user group."* (Baek et al. 2019)

Sometimes you might want to make use of the authors name within the text. Before, we used the command `citep{}`, which creates the brackets around author name and year. You can also use the `cite` command like this:

Dix et al. (2004) defined the concept of persona as follows:

> *"A persona is a rich picture of an imaginary person who represents your core user group."* (Zhou et al. 2017)

You may notice, that this increases the readability of the text.

According to APA format[1] there are some rules, when and how to include page numbers, when referring to literature.

> *"Include page numbers for any citations in the text of your paper that include direct quotations or refer to a specific part of the work you are referencing. Direct quotations must include a page number as part of the citation. The quoted material should be followed by a citation in parentheses that gives the author's name, the year in which the work was published, and the page number from which the quoted material appears."* (Hall 2013)

Check out the example and recommendations of Hall (2013) on `http://www.ehow.com/how_5689799_cite-numbers-apa-format.html`. In LaTeXyou can include the pages very easy. For example:

Baddeley & Hitch (1974, p. 86) stated:

> *"We hope that our preliminary attempts to begin answering the question will convince the reader, not necessarily that our views are correct, but that the question was and is well worth asking"* (Baddeley & Hitch 1974, p. 86)

Note that in the first reference, we used `citet[]{}` in order to have brackets just around year and page number; later we used `citep[]{}`.

5   Section about references within the document

If you want to refer to you own chapters, figures, tables or the like, you can make use of the `ref{}` command, for example:

- section 4 on page 3

5.1   Subsection within Foundations

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[1] American Psychological Association (APA)

5.2   Another subsection within Foundations

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6   Methodology

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7   Results

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8   Conclusion

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