CLAIMS

What is claimed is:

1. A method comprising:

receiving a digital image in a first format, the first format providing access to a strings and a bounding boxes of a one more text cells;

~~to a strings and a bounding boxes of a one more text cells;~~

applying within the bounding box of the text cell a first visual pattern if a predefined percentage of the characters in the string are digits; and else

applying within the bounding box of the text cell a second visual pattern;

encoding the strings of the one or more text cells as visual patterns according to a predefined string encoding scheme~~; and~~, wherein the predefined string encoding scheme is configured to encode the strings in dependence on the percentage of digits in the string; and

providing the digital image in a second format, the second format comprising the visual patterns of the strings of the one or more text cells.

2. The method according to claim 1, wherein the string encoding scheme is configured to encode natural language features of the string.

3. The method according to claim 1, the method further comprising

performing a digital image processing application with the digital image of the second format.

4. The method according to claim 1, the method further comprising

performing a machine learning application with the digital image of the second format.

5. The method according to claim 4, wherein the machine learning application is a deep neural network application.

6. The method according to claim 4, wherein the machine learning application is configured to identify a predefined set of items within the digital image.

7. The method according to claim 4, wherein the machine learning application is configured to perform tasks selected from the group consisting of:

classifying the digital image and/or elements of the digital image based on the visual patterns of the text cells;

detecting tables in the digital image; and

detecting images in the digital image representing a page layout.~~6~~

8. The method according to claim 1, wherein the digital image of the first format and the digital image of the second format comprises paths including corresponding path information, the path information comprising path coordinates.

~~7~~9. The method according to claim 1, the method further comprising

~~———~~augmenting the bounding boxes of the one or more text cells with the visual patterns of the corresponding strings.

~~8~~10. The method according to claim 1, the method further comprising

~~———~~superimposing the visual patterns on the bounding boxes of the one or more text cells.

~~9~~11. The method according to claim 1, wherein the encoding of the strings comprises

generating a word embedding of the string; and

generating the visual pattern from the word embedding of the string.

~~10.~~

12. The method according to claim 1~~, wherein the predefined string encoding scheme is configured to encode the strings in dependence on the percentage of digits in the string.~~

~~11. The method according to claim 1, the method comprising~~

~~applying within the bounding box of the text cell a first visual pattern if a predefined percentage of the characters in the string are digits; and else~~

~~applying within the bounding box of the text cell a second visual pattern.~~

~~12. The method according to claim 11~~, wherein the first visual pattern comprises or consists of vertical lines and the second visual pattern comprises or consist of ~~horizonal~~horizontal lines; or

the first visual pattern comprises or consists of ~~horizonal~~horizontal lines and the second visual pattern comprises or consist of vertical lines.

13. The method according to claim ~~11~~1, the method comprising

coloring the bounding box of the text cell with a first color if a predefined percentage of the characters in the string are digits; and else

coloring the bounding box of the text cell with a second color.

14. The method according to claim 1, wherein the digital image of the first format comprises bitmap resources and their bounding boxes.

15. -The method according to claim 14, further comprising

performing an optical character recognition on the bitmap resources;

identifying text cells including their strings and their bounding boxes in the bitmap resources; -and

encoding the strings of the text cells of the bitmap images as visual patterns according to the predefined string encoding scheme~~;~~.

16. The method according to claim 1, wherein the first format is a programmatic data format.

17. The method according to claim 1, wherein the first format is a format according to a Portable Document Format-standard.

18. The method according to claim 1, wherein the first format is selected from the group consisting of:

~~Java Script Object Notification Data Interchange Format;~~

Java Script Object Notification Data Interchange Format;

Hypertext Markup Language; and

YAML Ain't Markup Language.

19. The method according to claim 4, wherein the machine learning application is configured to identify a predefined set of items within the digital image.

20. The method according to claim 4, wherein the machine learning application is configured to perform tasks selected from the group consisting of:

classifying the digital image and/or elements of the digital image based on the visual patterns of the text cells;

detecting tables in the digital image; and

detecting images in the digital image representing a page layout.

21. A system comprising one or more processors for executing computer-readable instructions, the computer-readable instructions controlling the one or more processors to perform operations comprising:

receiving a digital image in a first format, the first format providing access to strings and bounding boxes of one more text cells;

to strings and bounding boxes of one more text cells;

applying within the bounding box of the text cell a first visual pattern if a predefined percentage of the characters in the string are digits; and else

applying within the bounding box of the text cell a second visual pattern;

encoding the strings of the one or more text cells as visual patterns according to a predefined string encoding scheme wherein the predefined string encoding scheme is configured to encode the strings in dependence on the percentage of digits in the string; and

providing the digital image in a second format, the second format comprising the visual patterns of the strings of the one or more text cells.

20. A computer program product comprising a computer-readable storage medium having program instructions embodied therewith, the program instructions executable by a processor to cause the processor to perform operations comprising:

receiving a digital image in a first format, the first format providing access

to strings and bounding boxes of one more text cells;

applying within the bounding box of the text cell a first visual pattern if a predefined percentage of the characters in the string are digits; and else

applying within the bounding box of the text cell a second visual pattern;

encoding the strings of the one or more text cells as visual patterns according to a predefined string encoding scheme~~; and~~ wherein the predefined string encoding scheme is configured to encode the strings in dependence on the percentage of digits in the string; and

providing the digital image in a second format, the second format comprising the visual patterns of the strings of the one or more text cells.

~~23~~

21. The computer program product of claim ~~22~~20, further comprising:

receiving digital images in a second format, the second format comprising visual patterns which encode strings of one or more text cells according to a predefined string encoding scheme; and

training a cognitive model of the machine learning application with the digital images of the second format.

~~24. A cognitive model for a machine learning application, the cognitive model being encoded on a non-transitory computer readable medium, the machine learning application being configured to process digital images, the digital images comprising one or more text cells, wherein each of the one or more text cells comprises a string and a bounding box, the cognitive model being configured to receive the digital images in a second format, the second format comprising visual patterns which encode strings of one or more text cells according to a predefined string encoding scheme.~~

~~25. A method for processing a digital image, the method comprising:~~

~~receiving, by a cognitive model, digital images in a second format, the second format comprising visual patterns which encode strings of one or more text cells according to a predefined string encoding scheme.~~