is disclosed.

[0004]

With regard to correction of a character recognition result, Patent Document 3 discloses that input content is displayed in accordance with a predetermined format when an image-input (character-recognized) form is corrected and checked, and a specific image portion corresponding to a received correction item is emphasized and displayed when a correction item is instructed by a user.

CITATION LIST

Patent Literature

[0005]

[Patent Document 1]

Japanese Unexamined Patent Application, First Publication No. 2016-048444

[Patent Document 2]

Japanese Unexamined Patent Application, First Publication No. 2004-118380

[Patent Document 3]

Japanese Unexamined Patent Application, First Publication No. 2002-007951

SUMMARY ~~OF THE INVENTION~~

~~Problems to be solved by the Invention~~

[0006]

When a character recognition result is checked and corrected, it is important for an operator who performs checking and correction to ascertain which item is shown and where the item is shown. In particular, when the operator usually checks and corrects a reading result of a document with a format unfamiliar, it may take some time to ascertain

where an item which the operator desires to check is shown.

Accordingly, it is preferable to assist the operator to ascertain which item is shown and where the item is shown. At this time, it is preferable to perform assistance also even when the format of a character recognition target document is not known in advance.

[0007]

An example objective of the present ~~invention~~ disclosure is to provide an image-processing device, an image-processing method, and a program capable of solving the above-described problems.

~~Means for Solving the Problems~~

[0008]

According to a first aspect of the present ~~invention~~disclosure, an image-processing device includes: a character string detection means for detecting a character string of an ~~specific~~ item in a first document image for recognition target, based on a feature ~~amount~~ value of the item included in the ~~displayed~~ first document image among feature ~~amounts~~ values, ~~which~~ the feature values~~are~~ being recorded in advance based on a result of learning by using a plurality of document images, ~~and~~ the feature values indicating~~e~~ features of attributes of characters included in the character string of the item for each ~~kind of document image and each specific~~ item in the plurality of document images; and an output means for outputting the first document image, a second document image and information regarding a correspondence relation indicating the ~~same specific~~ item that is the same between the first document image and ~~a~~ the second document image~~displayed to correspond to the first document image~~, wherein the second document image is a recognition result of the first document image.

[0009]

According to a second aspect of the present ~~invention~~disclosure, an image-processing method includes: detecting a character string of an ~~specific~~ item in a first document image for recognition target, based on a feature ~~amount~~ value of the item included in the ~~displayed~~ first document image among feature ~~amounts~~ values,

~~which~~ the feature values~~are~~ being recorded in advance based on a result of learning by using a plurality of document images, ~~and~~ the feature values indicating features of attributes of characters included in the character string of the item for each ~~kind of document image and each specific~~ item in the plurality of document images; and outputting the first document image, a second document image and information regarding a correspondence relation indicating the ~~same specific~~ item that is the same between the first document image and ~~a~~ the second document image ~~displayed to correspond to the first document image~~, wherein the second document image is a recognition result of the first document image.

[0010]

According to a third aspect of the present ~~invention~~disclosure, a non-transitory computer-readable storage medium stores a program causing a computer to perform processes of: detecting a character string of an ~~specific~~ item in a first document image for recognition target, based on a feature ~~amount~~ value of the item included in the ~~displayed~~ first document image among feature ~~amounts~~ values, ~~which~~ the feature values ~~are~~ being recorded in advance based on a result of learning by using a plurality of document images, ~~and~~ the feature values indicating features of attributes of characters included in the character string of the item for each ~~kind of document image and each specific~~ item in the plurality of document images; and outputting the first document image, a second document image and information regarding a correspondence relation indicating the ~~same specific~~ item that is the same between the first document image and ~~a~~ the second document image ~~displayed to correspond to the first document image~~, wherein the second document image is a recognition result of the first document image.

~~Advantageous Effects of Invention~~

[0011]

According to embodiments of the present ~~invention~~disclosure, even when the format of a character recognition target document is not known in advance, it is preferable to assist the operator to ascertain which item is shown and where the item is shown.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

Fig. 1 is a diagram illustrating an example of a device configuration of an

CLAIMS

1. An image-processing device, comprising:

a character string detection means for detecting a character string of an ~~specific~~ item in a first document image for recognition target, based on a feature ~~amount~~ value of the item included in the ~~displayed~~ first document image among feature ~~amounts~~ values, ~~which~~ the feature values being ~~are~~ recorded in advance based on a result of learning by using a plurality of document images, the feature values ~~and~~ indicating features of attributes of characters included in the character string of the item for each ~~kind of document image and each specific~~ item in the plurality of document images; and

an output means for outputting the first document image, a second document image and information regarding a correspondence relation indicating the ~~same specific~~ item that is the same between the first document image and ~~a~~ the second document image ~~displayed to correspond to the first document image.~~,

wherein the second document image is a recognition result of the first document image.

2. The image-processing device according to Claim 1, ~~wherein the character string detection means further detects the character string of the same specific item as the specific item of the first document image from the second document image.~~ further comprising:

an operation input means for receiving an operation of correcting the character string output by the output means, and

wherein the character string detection means records the character string that is corrected by the operation of correcting received by the operation input means.

3. The image-processing device according to Claim 1 or 2, ~~further comprising:~~

~~a correspondence relation learning means for performing machine learning for the correspondence relation of the same specific item between the first and second document images~~wherein the feature values are extracted on the basis of the attributes of the characters included in the character string of the item and information indicating a position of the character string of the item in the first document image.

4. The image-processing device according to Claim 3, wherein ~~the correspondence relation learning means performs the machine learning for the correspondence relation of the same specific item between the first and second document images using an image after the character string of the second document image is confirmed~~ the attributes of characters indicate at least one of numbers, alphabetical letters, hiragana letters, kanji, the number of characters, character heights, and fonts.

5. The image-processing device according to any one of Claims 1 to 4,

wherein the output means outputs an image in which a range of each of the candidates for the character string of the item in the first document image.

6. The image-processing device according to Claim 1, wherein

the output means outputs the information regarding the correspondence relation based on a result of machine learning of the correspondence relation between a character string included in a training document image and a character string included in a third document image which is a recognition result of the training document image.

~~5~~7. An image-processing method, comprising:

detecting a character string of an ~~specific~~ item in a first document image for recognition target, based on a feature ~~amount~~ value of the item included in the ~~displayed~~ first document image among feature ~~amounts~~ values, the feature values ~~which are~~ being recorded in advance based on a result of learning by using a plurality of document images, the feature values ~~and~~ indicating~~e~~ features of attributes of characters included in the character string of the item for each ~~kind of document image and each specific~~ item in the plurality of document images; and

outputting the first document image, a second document image and information regarding a correspondence relation indicating the ~~same specific~~ item that is the same between the first document image and ~~a~~ the second document image ~~displayed to correspond to the first document image.~~,

wherein the second document image is a recognition result of the first document image.

~~6~~8. A non-transitory computer-readable storage medium that stores a program causing a computer to perform processes of:

Detecting a character string of an ~~specific~~ item in a first document image for recognition target, based on a feature ~~amount~~ value of the item included in the ~~displayed~~ first document image among feature ~~amounts~~ values, ~~which~~ the feature values ~~are~~ being recorded in advance based on a result of learning by using a plurality of document images, ~~and~~ the feature values indicating~~e~~ features of attributes of characters included in the character string of the item for each ~~kind of document image and each specific~~ item in the plurality of document images; and

outputting the first document image, a second document image and information

regarding a correspondence relation indicating the ~~same specific~~ item that is the same between the first document image and ~~a~~ the second document image ~~displayed to correspond to the first document image.~~,

wherein the second document image is a recognition result of the first document image.