

CLAIMS

[Claim 1]

An image search device comprising:

a search condition input unit that receives a search condition for searching for an image;

a query generation unit that generates a first query based on the search condition;

an image search unit that searches for an image in a database based on the first query;

a relevance estimation unit that estimates relevance between a plurality of images selected by a predetermined operation among images hit by a search;

a query correction unit that generates a second query based on the relevance between the plurality of images; and

a function of displaying the second query generated by the query correction unit on an interface;

wherein the relevance estimation unit acquires an attribute included in the image and reliability of the attribute from the database for each of the plurality of images and estimates relevance between the plurality of images by predetermined statistical processing using the reliability;

wherein the relevance estimation unit analyzes distribution of the reliability in each attribute by the predetermined statistical processing and estimates relevance between the plurality of images by setting an attribute with

a variance value of reliability less than or equal to a predetermined value and an average value of reliability greater than or equal to a predetermined value as a candidate for an attribute to be added and setting an attribute with an average value of reliability equal to or less than the predetermined value as an attribute to be excluded.

[Claim 2]

The image search device according to claim 1, wherein the interface includes a relevant attribute estimation button, and

a trigger of the predetermined operation is selection of an image and pressing the relevance estimation button by a user.

[Claim 3]

The image search device according to claim 2, wherein the search condition is determined by the user selecting a specific attribute from a plurality of attributes displayed on the interface or by analyzing a query image input from the user.

[Claim 4]

The image search device according to claim 3, further comprising:

an image input unit that acquires an image data group from a storage device based on a predetermined condition specified by the user and registers the image data group in the database after performing predetermined conversion processing.

[Claim 5]

The image search device according to claim 4, wherein the relevance estimation unit selects an image whose similarity with an image selected by the user is equal to or greater than a predetermined value from the database and adds the image as a target of the relevance estimation.

[Claim 6]

The image search device according to claim 5, wherein the relevance estimation unit creates an attention probability map indicating an area in which highly reliable attributes are distributed, for each attribute, and outputs the attention probability map to the interface.

[Claim 7]

The image search device according to claim 6, wherein the relevance estimation unit calculates similarity of the attention probability map for each pair of attributes and outputs the pair of attributes whose similarity is equal to

or greater than a predetermined value to the interface as a new attribute.

[Claim 8]

An image search method comprising:

a step of receiving a search condition for searching for an image by a search condition input unit;

a step of generating a first query based on the search condition by a query generation unit;

a step of searching for an image in a database based on the first query by an image search unit;

a step of estimating relevance between a plurality of images selected by a predetermined operation among images hit by a search, by a relevance estimation unit;

a step of generating a second query based on the relevance between the plurality of images by a query correction unit;

a step of acquiring an attribute included in the image and reliability of the attribute from the database for each of the plurality of images and estimates relevance between the plurality of images by predetermined statistical processing using the reliability, by the relevance estimation unit; and

a step of analyzing distribution of the reliability in each attribute by the predetermined statistical processing and estimating relevance between the plurality of images by setting an attribute with a variance value of reliability less than

or equal to a predetermined value and an average value of reliability greater than or equal to a predetermined value as a candidate for an attribute to be added and setting an attribute with an average value of reliability equal to or less than the predetermined value as an attribute to be excluded, by the relevance estimation unit.