

CLAIMS

1. A commercial product size determination device comprising:

a processor; and

a memory storing a computer program that, when executed, causes the processor to function as:

an image acquisition unit (10) that acquires a photographic image showing a reference object of a known size and a body portion that should wear a commercial product via a network or an image capturing device, the known size being a known outer length and a known outer width of the reference object;

a detection unit (20) that detects at least one of an outer width and an outer length of the reference object in the photographic image;

a measurement unit (34) that measures a size of the body portion in the photographic image; and

an estimation unit (40) that estimates an actual size of the body portion from a measured value of the size of the body portion in the photographic image, based on a ratio between the detected at least one of the outer length and the outer width of the reference object and at least corresponding one of the known outer length and the known outer width of the reference object, wherein

the detection unit (20) detects the size of the reference object in the photographic image by performing projective transform that transforms a shape of the reference object in the photographic image into an original shape, and

the measurement unit (34) subjects the photographic image to the projective transform before measuring the size of the body portion in the photographic image.

2. The commercial product size determination device according to claim 1, further comprising:

the processor is also caused to function as a determination unit (50) that determines a size of a commercial product based on the estimated value of the actual size of the body portion.

3. The commercial product size determination device according to claim 2, wherein

the determination unit (50) adjusts the size of the commercial product determined based on the estimated value of the actual size of the body portion, based on feedback from a user relating to appropriateness of the size of the commercial product as determined.

4. A commercial product size determination device comprising:

a processor; and

a memory storing a computer program that, when executed, causes the processor to function as:

an image acquisition unit (10) that acquires a photographic image showing a reference object of a known size and a body portion that should wear a commercial product via a network or an image capturing device, the known size being a known outer length and a known outer width of the reference object;

a detection unit (20) that detects at least one of an outer width and an outer length of the reference object in the photographic image;

a measurement unit (34) that measures a size of the body portion in the photographic image; and

an estimation unit (40) that estimates an actual size of the body portion from a measured value of the size of the body portion in the photographic image, based on a ratio

between the detected at least one of the outer length and the outer width of the reference object and at least corresponding one of the known outer length and the known outer width of the reference object, wherein

the image acquisition unit (10) acquires a photographic image showing a hand along with the reference object of the known size,

the measurement unit (34) measures a size of a joint of a finger in the photographic image, the finger being configured to wear a ring, and

the estimation unit (40) estimates an actual size of the joint of the finger from a measured value of the size of the joint of the finger in the photographic image, based on the ratio between the known size of the reference object and the size of the reference object detected in the photographic image.

5. A commercial product size determination method, comprising:

acquiring, by a processor, a photographic image showing a reference object of a known size and a body portion that should wear the commercial product via a network or an image capturing device, the known size being a known outer length and a known outer width of the reference object;

detecting, by the processor, at least one of an outer length and an outer width of the reference object in the photographic image;

measuring, by the processor, a size of the body portion in the photographic image; and

estimating, by the processor, an actual size of the body portion from a measured value of the size of the body portion in the photographic image, based on a ratio between the detected at least one of the outer length and the outer width of the reference object and at least corresponding one of the

known outer length and the known outer width of the reference object, wherein

the size of the reference object in the photographic image is detected by performing projective transform that transforms a shape of the reference object in the photographic image into an original shape, and

the photographic image is subjected to the projective transform before measuring the size of the body portion in the photographic image.

6. A non-transitory computer readable medium storing a commercial product size determination program, the program comprising:

a module that causes a processor to:

acquire a photographic image showing a reference object of a known size and a body portion that should wear a commercial product via a network or an image capturing device, the known size being a known outer length and a known outer width of the reference object;

detect at least one of an outer width and an outer length of the reference object in the photographic image;

measure a size of the body portion in the photographic image; and

estimate an actual size of the body portion from a measured value of the size of the body portion in the photographic image, based on a ratio between the detected at least one of the outer length and the outer width of the reference object and at least corresponding one of the known outer length and the known outer width of the reference object, wherein

the size of the reference object in the photographic image is detected by performing projective transform that transforms a shape of the reference object in the photographic image into an original shape, and

the photographic image is subjected to the projective transform before measuring the size of the body portion in the photographic image.

7. The commercial product size determination device according to claim 1, wherein the reference object is a credit card or a debit card.

8. The commercial product size determination device according to claim 1, wherein the reference object is a coin or a currency.

9. The commercial product size determination device according to claim 1,

wherein the photographic image showing the reference product of the known size and the body portion that should wear the commercial product is a photographic image taken with a flashlight and a photographic image taken without a flashlight, and

further comprising a background removal unit (12) that uses the image taken with the flashlight and the image taken without the flashlight to perform a filtering process of removing a background from the photographic image showing the body portion that should wear the commercial product.