

What is claimed is:

1. A method for generating an iris identifier, the method comprising:
 - obtaining a plurality of images of an iris;
 - generating a binary code for each of the plurality of images of the iris, the binary code comprising a sequence of bits;
 - identifying a first pattern of bits for which bit values and bit-locations are the same across a plurality of the binary codes;
 - generating a first index based on the first pattern of bits; ~~and~~
 - storing the first index on a storage device in accordance with a database management system, the first index linked to biometric information of a different modality for a corresponding user;
 - capturing at least one iris image from a user attempting to access a secure system;
 - generating, from the at least one iris image, multiple binary codes;
 - identifying a second pattern of bits in the binary codes for which bit values and bit-locations are the same across the multiple binary codes generated from the at least one iris image;
 - generating a second index based on the second pattern of bits
 - determining that the second index is substantially similar to the first index;
 - responsive to determining that the second index is substantially similar to the first index, retrieving the biometric information of the different modality linked to the first index;
 - obtaining, from the user attempting to access the secure system, biometric information of the different modality; and
 - granting access to the secure system responsive to determining that the biometric information obtained from the user attempting to access the secure system is substantially the same as the biometric information of the different modality linked to the first index.

2. The method of claim 1, wherein obtaining the plurality of images of the iris comprises:
 - capturing a first image of the iris; and
 - generating the plurality of images by processing the first image by multiple different filters that simulate various image capture conditions.
3. The method of claim 1, wherein generating the binary code comprises filtering the image using a Gabor filter.
4. The method of claim 1, wherein generating the index comprises combining the first pattern of bits together with location information corresponding to the first pattern of bits.
5. The method of claim 1, wherein the biometric information of the different modality linked to the first index comprises one of a facial image, a fingerprint image, or an eyeprint image.
- ~~6. The method of claim 1, further comprising:
 - capturing at least one iris image from a user attempting to access a secure system;
 - generating, from the at least one iris image, multiple binary codes;
 - identifying a second pattern of bits in the binary codes for which bit values and bit locations are the same across the multiple binary codes generated from the at least one iris image;
 - generating a second index based on the second pattern of bits
 - determining that the second index is substantially similar to the first index;
 - responsive to determining that the second index is substantially similar to the first index, retrieving the biometric information of the different modality linked to the first index;
 - obtaining, from the user attempting to access the secure system, biometric information of the different modality; and~~

~~granting access to the secure system responsive to determining that the biometric information obtained from the user attempting to access the secure system is substantially the same as the biometric information of the different modality linked to the first index.~~

76. A system comprising:
- at least one processing device;
 - a memory communicatively coupled to the at least one processing device, the memory storing instructions which, when executed, cause the at least one processing device to perform operations comprising:
 - obtaining a plurality of images of an iris;
 - generating a binary code for each of the plurality of images of the iris, the binary code comprising a sequence of bits;
 - identifying a first pattern of bits for which bit values and bit-locations are the same across a plurality of the binary codes;
 - generating a first index based on the first pattern of bits; ~~and~~
 - storing the first index on a storage device in accordance with a database management system, the first index linked to biometric information of a different modality for a corresponding user;

~~capturing at least one iris image from a user attempting to access a secure system;~~

~~generating, from the at least one iris image, multiple binary codes;~~

~~identifying a second pattern of bits in the binary codes for which bit values and bit-locations are the same across the multiple binary codes generated from the at least one iris image;~~

~~generating a second index based on the second pattern of bits~~

~~determining that the second index is substantially similar to the first index;~~

~~responsive to determining that the second index is substantially similar to the first index, retrieving the biometric information of the different modality linked to the first index;~~

obtaining, from the user attempting to access the secure system, biometric information of the different modality; and
granting access to the secure system responsive to determining that the biometric information obtained from the user attempting to access the secure system is substantially the same as the biometric information of the different modality linked to the first index.

~~87.~~ The system of claim ~~76~~, wherein obtaining the plurality of images of the iris comprises:

capturing a first image of the iris; and

generating the plurality of images by processing the first image by multiple different filters that simulate various image capture conditions.

~~98.~~ The system of claim ~~76~~, wherein generating the binary code comprises filtering the image using a Gabor filter.

~~109.~~ The system of claim ~~76~~, wherein generating the index comprises combining the first pattern of bits together with location information corresponding to the ~~first~~ pattern of bits.

~~1110.~~ The system of claim ~~76~~, wherein the biometric information of the different modality linked to the first index comprises one of a facial image, a fingerprint image, or an eyeprint image.

~~12. The system of claim 7, wherein the operations further comprise:~~

~~capturing at least one iris image from a user attempting to access a secure system;~~

~~generating, from the at least one iris image, multiple binary codes;~~

~~identifying, a second pattern of bits in the binary codes for which bit values and bit locations are the same across the multiple binary codes generated from the at least one iris image;~~

~~generating a second index based on the second pattern of bits~~

~~——determining that the second index is substantially similar to the first index;~~
~~——responsive to determining that the second index is substantially similar to the first index, retrieving the biometric information of the different modality linked to the first index;~~
~~——obtaining, from the user attempting to access the secure system, biometric information of the different modality; and~~
~~——granting access to the secure system responsive to determining that the biometric information obtained from the user attempting to access the secure system is substantially the same as the biometric information of the different modality linked to the first index.~~

~~1311.~~ A non-transitory computer-readable medium having encoded thereon computer readable instructions for causing one or more processing devices to perform operations comprising:

obtaining a plurality of images of an iris;
generating a binary code for each of the plurality of images of the iris, the binary code comprising a sequence of bits;
identifying a first pattern of bits for which bit values and bit-locations are the same across a plurality of the binary codes;
generating a first index based on the first pattern of bits; ~~and~~
storing the first index on a storage device in accordance with a database management system, the first index linked to biometric information of a different modality for a corresponding user

~~——capturing at least one iris image from a user attempting to access a secure system;~~

~~——generating, from the at least one iris image, multiple binary codes;~~

~~——identifying, a second pattern of bits in the binary codes for which bit values and bit-locations are the same across the multiple binary codes generated from the at least one iris image;~~

~~——generating a second index based on the second pattern of bits~~

~~——determining that the second index is substantially similar to the first index;~~

responsive to determining that the second index is substantially similar to the first index, retrieving the biometric information of the different modality linked to the first index;

obtaining, from the user attempting to access the secure system, biometric information of the different modality; and

granting access to the secure system responsive to determining that the biometric information obtained from the user attempting to access the secure system is substantially the same as the biometric information of the different modality linked to the first index.

~~14~~12. The non-transitory computer-readable medium of claim ~~13~~11, wherein obtaining the plurality of images of the iris comprises:

capturing a first image of the iris; and

generating the plurality of images by processing the first image by multiple different filters that simulate various image capture conditions.

~~15~~13. The non-transitory computer-readable medium of claim ~~13~~11, wherein generating the binary code comprises filtering the image using a Gabor filter.

~~16~~14. The non-transitory computer-readable medium of claim ~~13~~11, wherein generating the index comprises combining the first pattern of bits together with location information corresponding to the first pattern of bits.

~~17~~15. The non-transitory computer-readable medium of claim ~~13~~11, wherein the biometric information of the different modality linked to the first index comprises one of a facial image, a fingerprint image, or an eyeprint image.

~~18. The non-transitory computer-readable medium of claim 13, wherein the operations further comprise:~~

~~capturing at least one iris image from a user attempting to access a secure system;~~

~~generating, from the at least one iris image, multiple binary codes;~~

—— identifying, a second pattern of bits in the binary codes for which bit values and bit locations are the same across the multiple binary codes generated from the at least one iris image;

—— generating a second index based on the second pattern of bits

—— determining that the second index is substantially similar to the first index;

—— responsive to determining that the second index is substantially similar to the first index, retrieving the biometric information of the different modality linked to the first index;

—— obtaining, from the user attempting to access the secure system, biometric information of the different modality; and

—— granting access to the secure system responsive to determining that the biometric information obtained from the user attempting to access the secure system is substantially the same as the biometric information of the different modality linked to the first index.