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Electronic Devices and Corresponding Methods for Utilizing User Sensory Preference Reaction Scores to Enhance User Interface Interactions

Abstract

An electronic device includes a user interface, a memory, one or more sensors, and one or more processors operable with the user interface, the memory, and the one or more sensors. The one or more processors are configured to, when the one or more sensors identify an authorized user of the electronic device using the electronic device, determine a dominant sensory profile associated with the authorized user and store the dominant sensory profile associated with the authorized user in the memory of the electronic device.

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Background/Summary

BACKGROUND

Technical Field

[0001] This disclosure relates generally to electronic devices, and more particularly to electronic devices having one or more sensors.

Background Art

[0002] Portable electronic device usage has become ubiquitous. Vast majorities of the population carry a smartphone, tablet computer, or laptop computer daily to communicate with others, stay informed, to consume entertainment, and to manage their lives.

[0003] As the technology incorporated into these portable electronic devices has become more advanced, so too has their feature set. A modern smartphone includes more computing power than a desktop computer of only a few years ago. Additionally, while early generation portable electronic devices included physical keypads, most modern portable electronic devices include touch-sensitive displays. While such improvements to user interfaces are beneficial, each electronic device user is different from another. As such, a singular user interface may not be optimized for all users. It would be advantageous to have an improved electronic device with improved user interface capabilities so as to better fit the needs of all users.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The accompanying figures, where like reference numerals refer to identical or functionally similar elements throughout the separate views and which together with the detailed description below are incorporated in and form part of the specification, serve to further illustrate various embodiments and to explain various principles and advantages all in accordance with the present disclosure.

[0005] FIG. **1** illustrates one explanatory electronic device in accordance with one or more embodiments of the disclosure.

[0006] FIG. **2** illustrates one explanatory method in accordance with one or more embodiments of the disclosure.

[0007] FIG. **3** illustrates one or more method steps in accordance with one or more embodiments of the disclosure.

[0008] FIG. **4** illustrates a sensory reaction graph in accordance with one or more embodiments of the disclosure.

[0009] FIG. **5** illustrates one or more dominant sensory profile factors in accordance with one or more embodiments of the disclosure.

[0010] FIG. **6** illustrates another explanatory method in accordance with one or more embodiments of the disclosure.

[0011] FIGS. **7-11** illustrate different user interface presentations created as a function of dominant sensory profiles in accordance with one or more embodiments of the disclosure.

[0012] FIG. **12** illustrates an electronic device presenting a dominant sensory profile score editor in accordance with one or more embodiments of the disclosure.

[0013] FIG. **13** illustrates various embodiments of the disclosure.

[0014] Skilled artisans will appreciate that elements in the figures are illustrated for simplicity and clarity and have not necessarily been drawn to scale. For example, the dimensions of some of the elements in the figures may be exaggerated relative to other elements to help to improve understanding of embodiments of the present disclosure.

DETAILED DESCRIPTION OF THE DRAWINGS

[0015] Before describing in detail embodiments that are in accordance with the present disclosure, it should be observed that the embodiments reside primarily in combinations of method steps and

apparatus components related to presenting, by one or more processors of an electronic device on a user interface, a plurality of user interface elements, with each user interface element of the plurality of user interface elements catering to different sensory perceptions from other user interface elements of the plurality of user interface elements, measuring, by one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements, and determining, by the one or more processors from the reactions, a user sensory preference reaction score. Any process descriptions or blocks in flow charts should be understood as representing modules, segments, or portions of code which include one or more executable instructions for implementing specific logical functions or steps in the process.

[0016] Alternate implementations are included, and it will be clear that functions may be executed out of order from that shown or discussed, including substantially concurrently or in reverse order, depending on the functionality involved. Accordingly, the apparatus components and method steps have been represented where appropriate by conventional symbols in the drawings, showing only those specific details that are pertinent to understanding the embodiments of the present disclosure so as not to obscure the disclosure with details that will be readily apparent to those of ordinary skill in the art having the benefit of the description herein.

[0017] Embodiments of the disclosure do not recite the implementation of any commonplace business method aimed at processing business information, nor do they apply a known business process to the particular technological environment of the Internet. Moreover, embodiments of the disclosure do not create or alter contractual relations using generic computer functions and conventional network operations. Quite to the contrary, embodiments of the disclosure employ methods that, when applied to electronic device and/or user interface technology, improve the functioning of the electronic device itself by and improving the overall user experience to overcome problems specifically arising in the realm of the technology associated with electronic device user interaction.

[0018] It will be appreciated that embodiments of the disclosure described herein may be comprised of one or more conventional processors and unique stored program instructions that control the one or more processors to implement, in conjunction with certain non-processor circuits, some, most, or all of the functions of, in response to one or more sensors of an electronic device identifying an authorized user of the electronic device using the electronic device, determining, by one or more processors operable with the one or more sensors, to determine a dominant sensory profile associated with the authorized user and then store the dominant sensory profile in a memory of the electronic device described herein. The non-processor circuits may include, but are not limited to, a radio receiver, a radio transmitter, signal drivers, clock circuits, power source circuits, and user input devices.

[0019] As such, these functions may be interpreted as steps of a method to perform the presentation, by one or more processors on a user interface, a plurality of user interface elements, with each user interface element of the plurality of user interface elements including components catering to a different sensory perception from other user interface elements of the plurality of user interface elements, measuring, using one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements, determining, by the one or more processors, a user sensory preference reaction score, and storing the user sensory preference reaction score in a memory of the electronic device. Alternatively, some or all functions could be implemented by a state machine that has no stored program instructions, or in one or more application specific integrated circuits (ASICs), in which each function or some combinations of certain of the functions are implemented as custom logic.

[0020] Of course, a combination of the two approaches could be used. Thus, methods and means for these functions have been described herein. Further, it is expected that one of ordinary skill, notwithstanding possibly significant effort and many design choices motivated by, for example, available time, current technology, and economic considerations, when guided by the concepts and

principles disclosed herein will be readily capable of generating such software instructions and programs and ASICs with minimal experimentation.

[0021] Embodiments of the disclosure are now described in detail. Referring to the drawings, like numbers indicate like parts throughout the views. As used in the description herein and throughout the claims, the following terms take the meanings explicitly associated herein, unless the context clearly dictates otherwise: the meaning of "a," "an," and "the" includes plural reference, the meaning of "in" includes "in" and "on." Relational terms such as first and second, top and bottom, and the like may be used solely to distinguish one entity or action from another entity or action without necessarily requiring or implying any actual such relationship or order between such entities or actions.

[0022] As used herein, components may be "operatively coupled" when information can be sent between such components, even though there may be one or more intermediate or intervening components between, or along the connection path. The terms "substantially," "essentially," "approximately," "about," or any other version thereof, are defined as being close to as understood by one of ordinary skill in the art, and in one non-limiting embodiment the term is defined to be within ten percent, in another embodiment within five percent, in another embodiment within one percent and in another embodiment within one-half percent. The term "coupled" as used herein is defined as connected, although not necessarily directly and not necessarily mechanically. Also, reference designators shown herein in parenthesis indicate components shown in a figure other than the one in discussion. For example, talking about a device (**10**) while discussing figure A would refer to an element, **10**, shown in figure other than figure A.

[0023] Sensory branding is a concept sometimes used in marketing campaigns where marketing copy is designed to appeal to different—or all—senses in relation to a particular brand. Sensory branding uses the senses to relate to customers on an emotional level.

[0024] Some believe that the difference between products consumers consider to be "ordinary" suddenly become "captivating" products when the emotion of sensory branding is added. When such "emotion" is integrated into marketing copy, products and services seem to "shine" more to prospective customers. When this "emotion" is absent, potential customers can lack the enthusiasm and passion that is required to launch a product or service into the atmosphere of success.

[0025] Embodiments of the disclosure contemplate that owners of brands can forge emotional associations in the minds of potential customers by appealing to their senses. Indeed, a multi-sensory brand experience can beneficially generate certain beliefs, feelings, thoughts, and opinions to create a sensory image in the minds of those potential customers.

[0026] Embodiments of the disclosure also contemplate that the benefit of appealing to a person's senses can also be integrated into the user interface experiences provided by an electronic device. Said differently, embodiments of the disclosure contemplate that processors, sensors, and other components of an electronic device, such as a smartphone, can be configured to increase the pleasure, usage, excitement, and richness of the user interface experience. When user interfaces are configured to provide experiences in accordance with user sensory preference reaction scores or dominant sensory profiles configured in accordance with embodiments of the disclosure, users can even be prompted to recommend those user interfaces to others so that others can share in the joy of the rich sensory experiences.

[0027] Embodiments of the disclosure contemplate that sensory-focuses experiences cater to the five senses of human beings, namely, sight, sound, touch, smell, and taste. Marketers and other companies are increasingly competing with each other to make their branding and advertising experiences sensory-focused. In multi-media environments, these companies increasingly use rich animations, music, and motion to appeal to users. While such user experiences can produce positive responses, they introduce to problematic issues: sensory overload/deprivation and lack of personalization.

[0028] While sensory branding can advantageously appeal to each of the senses of a user,

embodiments of the disclosure contemplate that overloading one particular sense, or trying to stimulate all the senses at once, can lead to overstimulation. In turn, this overstimulation may result in the exact opposite of the effect desired, namely, less interest and engagement. To compensate, embodiments of the disclosure contemplate that certain brands present sensory overload experiences. However, this can lead to sensory deprivation leading to extremely low stimulation from the sensory branding. In short, users tend to get bored when there is no sensory value addition.

[0029] While companies frequently use sensory branding, the senses targeted by this branding reflects the company or brand and not the user. Illustrating by example, a coffee shop may create a user experience centered around aroma to appeal to a user's sense of smell. However, trying to appeal to this particular sense with each and every user may backfire when certain people are not "smell" centered when it comes to the five senses. Said differently, embodiments of the disclosure contemplate that sensory branding generally lacks personalization.

[0030] From these conclusions, it becomes evident that it would be advantageous to be able to personalize branding campaigns and corresponding user experiences to adapt to user preferences with particularity rather than delivering generic experiences. Embodiments of the disclosure contemplate that the stimulations that cater to different senses are not mutually exclusive. To the contrary, some users may enjoy having all five senses stimulated while other users may prefer only a few and may dislike more than that receiving stimulation. With prior art electronic devices and user interfaces, there is no way for companies and other content creators to understand how each individual user will react to sensory stimulation. Embodiments of the disclosure advantageously help such companies and content creators to know just this information so that they can target such users with specific user interface experiences that cater to their preferred sensory experiences.

[0031] In one or more embodiments, a method in an electronic device helps to identify the dominant sensory profile of each user of an electronic device. In one or more embodiments, the dominant sensory profile is associated with one or more senses that each user of the electronic device preferably responds.

[0032] In one or more embodiments, to determine the dominant sensory profile, one or more sensors of the electronic device monitor a user's interactions with the user interface of the electronic device and, optionally, also with any connected companion devices. The one or more sensors of the electronic device use a variety of parameters to determine a, from detected reactions to a plurality of user interface elements presented on a user interface, a user sensory preference reaction score. In one or more embodiments, the user sensory preference reaction score defines a measurement of sensory responses for each sense of each user. In one or more embodiments, one or more processors can provide options for refining the user sensory preference reaction score as well. In one or more embodiments, the user sensory preference reaction scores are used to appropriately segment users into those that respond to, for example, visual stimuli, aural stimuli, smells, touch, and so forth.

[0033] In one or more embodiments, methods in electronic devices identify high dominance and low dominance factors for each sense using one or more sensors that measure reactions of a user of an electronic device to user interface elements presented on a user interface of the electronic device. In one or more embodiments, one or more processors then determine, from the reactions, the user sensory preference reaction score. Illustrating by example, if a user is always wearing a noise-canceling headset—even when no music is playing—the ear-minded dominance score component of the user sensory preference reaction score may be diminished.

[0034] In one or more embodiments, the user sensory preference reaction score is determined using an ear-minded dominance score, an eye-minded dominance score, a smell-minded dominance score, a taste-minded dominance score, and a motor-minded dominance score. In one or more embodiments, each score can be multiplied by a weighting factor since not all scores are necessarily equal. Illustrating by example, a noise canceling headset factor may have a different

weighting factor (higher or lower) compared to another factor associated with whether the user tends to enhance audio output with stereo, surround, or other effects.

[0035] In one or more embodiments, the scores can then be summed. In one or more embodiments, one or more processors of the electronic device normalize the eye-minded dominance score, the smell-minded dominance score, the ear-minded dominance score, the taste-minded dominance score, and the motor-minded dominance score to have a value between one and negative one, inclusive. To ensure that each normalized user sensory preference reaction score can be customized as desired by a user, in one or more embodiments one or more processors present the user sensory preference reaction score on a user interface. Users can deliver user input to the user interface to adjust one or more processors sensory preference elements of the user sensory preference reaction score as a function of this user input.

[0036] Accordingly, in one or more embodiments a method in an electronic device comprises presenting, by one or more processors on a user interface, a plurality of user interface elements. In one or more embodiments, each user interface element of the plurality of user interface elements includes components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements.

[0037] Thereafter, one or more sensors of the electronic device can measure reactions of a user of the electronic device to the plurality of user interface elements. In one or more embodiments, one or more processors of the electronic device then determine the user sensory preference reaction score from these measured reactions. The one or more processors can then associate the user sensory preference reaction score with a dominant sensory profile associated with a user of the electronic device and can store that dominant sensory profile in a memory of the electronic device. The method can be repeated as different users use the electronic device.

[0038] In one or more embodiments, an electronic device comprises a user interface, a memory, one or more sensors, and one or more processors operable with the user interface, the memory, and the one or more sensors. In one or more embodiments, the one or more processors are configured to, when the one or more sensors identify an authorized user of the electronic device using the electronic device, to determine a dominant sensory profile associated with the authorized user and store the dominant sensory profile associated with the authorized user in the memory of the electronic device.

[0039] In one or more embodiments, the one or more processors are further configured to modify one or more user interface elements presented on the user interface of the electronic device as a function of the dominant sensory profile associated with the authorized user of the electronic device to create one or more modified user interface elements and, thereafter, cause the user interface to present the one or more modified user interaction events. In one or more embodiments, the one or more modified user interface elements are enhanced as a function of a first combination of a visual appearance preferred by the authorized user of the electronic device, an olfactory appearance preferred by the authorized user of the electronic device, an aural appearance preferred by the authorized user of the electronic device, a gustatory appearance preferred by the authorized user of the electronic device, and a haptic appearance preferred by the authorized user of the electronic device and diminished as a second combination of the visual appearance preferred by the authorized user of the electronic device, the olfactory appearance preferred by the authorized user of the electronic device, the aural appearance preferred by the authorized user of the electronic device, the gustatory appearance preferred by the authorized user of the electronic device, and the haptic appearance preferred by the authorized user of the electronic device.

[0040] In one or more embodiments, a method in an electronic device comprises presenting, by one or more processors on a user interface, a plurality of user interface elements, with each user interface element of the plurality of user interface elements including components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements. In one or more embodiments, the method comprises measuring, by the one or more

sensors, reactions of a user of the electronic device to the plurality of user interface elements. In one or more embodiments, the one or more processors determine, from the reactions, a user sensory preference reaction score and store that user sensory preference reaction score in a memory orientation detector the electronic device. In one or more embodiments, the one or more processors can then adjust the user sensory preference reaction score in response to additional user input received from the user of the electronic device.

[0041] Advantageously, embodiments of the disclosure identify and provide assessments of the most receptive dominant sensors as a function of monitoring device usage behavior. Thereafter, components of user interface presentations can be modified as a function of this dominant sensory profile. Other advantages will be described below. Still others will be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0042] Turning now to FIG. **1**, illustrated therein is one electronic device **100** configured in accordance with one or more embodiments of the disclosure. The electronic device **100** of this illustrative embodiment includes a user interface **123**. In one or more embodiments, the user interface **123** comprises a display **101**, which may optionally be touch-sensitive. The display **101** can serve as a primary user interface **123** of the electronic device **100**.

[0043] Where the display **101** is touch sensitive, users can deliver user input to the display **101** by delivering touch input from a finger, stylus, or other objects disposed proximately with the display. In one embodiment, the display **101** is configured as an active-matrix organic light emitting diode (AMOLED) display. However, it should be noted that other types of displays, including liquid crystal displays, would be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0044] The explanatory electronic device **100** of FIG. **1** includes a housing **103**. Features can be incorporated into the housing **103**. Examples of features that can be included along the housing **103** include an imager **109**, shown as a camera in FIG. **1**, or an optional speaker port. A user interface component, which may be a button or touch sensitive surface, can also be disposed along the housing **103**.

[0045] A block diagram schematic **150** of the electronic device **100** is also shown in FIG. **1**. In one embodiment, the electronic device **100** includes one or more processors **106**. In one embodiment, the one or more processors **106** can include an application processor and, optionally, one or more auxiliary processors. One or both of the application processor or the auxiliary processor(s) can include one or more processors. One or both of the application processor or the auxiliary processor(s) can be a microprocessor, a group of processing components, one or more Application Specific Integrated Circuits (ASICs), programmable logic, or other type of processing device.

[0046] The application processor and the auxiliary processor(s) can be operable with the various components of the electronic device **100**. Each of the application processor and the auxiliary processor(s) can be configured to process and execute executable software code to perform the various functions of the electronic device **100**. A storage device, such as memory **112**, can optionally store the executable software code used by the one or more processors **106** during operation.

[0047] In this illustrative embodiment, the electronic device **100** also includes a communication device **108** that can be configured for wired or wireless communication with one or more other devices or networks. The networks can include a wide area network, a local area network, and/or personal area network. The communication device **108** may also utilize wireless technology for communication, such as, but are not limited to, peer-to-peer, or ad hoc communications such as HomeRF, Bluetooth and IEEE 802.11 based communication, or alternatively via other forms of wireless communication such as infrared technology. The communication device **108** can include wireless communication circuitry, one of a receiver, a transmitter, or transceiver, and one or more antennas **110**.

[0048] The electronic device **100** can optionally include a near field communication circuitry **107**

used to exchange data, power, and electrical signals between the electronic device **100** and another electronic device. In one embodiment, the near field communication circuitry **107** is operable with a wireless near field communication transceiver, which is a form of radio-frequency device configured to send and receive radio-frequency data to and from the companion electronic device or other near field communication objects.

[0049] Where included, the near field communication circuitry **107** can have its own near field communication circuit controller in one or more embodiments to wirelessly communicate with companion electronic devices using various near field communication technologies and protocols. The near field communication circuitry **107** can include—as an antenna—a communication coil that is configured for near-field communication at a particular communication frequency. The term "near-field" as used herein refers generally to a distance of less than about a meter or so. The communication coil communicates by way of a magnetic field emanating from the communication coil when a current is applied to the coil. A communication oscillator applies a current waveform to the coil. The near field communication circuit controller may further modulate the resulting current to transmit and receive data, power, or other communication signals with companion electronic devices.

[0050] In one embodiment, the one or more processors **106** can be responsible for performing the primary functions of the electronic device **100**. For example, in one embodiment the one or more processors **106** comprise one or more circuits operable to present presentation information, such as images, text, and video, on the display **101**. In one or more embodiments, this information can be specifically tailored to a user sensory preference reaction score **118** and/or a dominant sensory profile **119** associated with an authorized user of the electronic device **100**.

[0051] Illustrating by example, in one or more embodiments a sensory perception score manager **102** is operable to present, on the user interface **123**, a plurality of user interface elements **131**. In one or more embodiments, each of the plurality of user interface elements **131** includes components catering to different sensory perceptions from other user interaction events of the plurality of user interface elements **131**.

[0052] For instance, in one or more embodiments the plurality of user interface elements **131** comprises text, with at least one user interface element enhancing a characteristic associated with at least one user sensory element and diminishing another characteristic associated with at least one other user sensory element. If a basic user sensory element was an advertisement for fried chicken from Buster's Chicken Shack, when that user sensory element was configured to enhance a sight characteristic, touch characteristic, and sound characteristic, while diminishing a smell characteristic and taste, the advertisement may read "See Buster's Chicken Glisten as the beautifully crisped crust crackles in your fingers." By contrast, if the user sensory element was configured to enhance taste and smell, while diminishing sight, touch, and sound, the advertisement may read, "Blind tasters instantly recognize that heavenly aroma, even before the succulent juices reach their lips," and so forth.

[0053] Accordingly, by presenting this plurality of user interface elements **131** and measuring reactions, the sensory perception score manager **102** can not only calculate the user sensory preference reaction score **118** of the authorized user of the electronic device **100**, but also associate that user sensory preference reaction score **118** with a dominant sensory profile **119** associated with the authorized user of the electronic device **100**. The sensory perception score manager **102** can then store the dominant sensory profile **119** in the memory **112** of the electronic device **100**.

[0054] When new users begin using the electronic device **100**, the sensory perception score manager **102** can detect, using the one or more sensors **126**, another user using the electronic device **100**. In one or more embodiments, the sensory perception score manager **102** then repeats the presentation of the plurality of user interface elements **131**, measures the reactions of the other user to the plurality of user interface elements **131**, and determines from those reactions another user sensory preference reaction score **118**. Thus, multiple users can each have a personalized user

sensory preference reaction score **118** and corresponding dominant sensory profile **119**.

[0055] In one or more embodiments, the sensory perception score manager **102** then measures, using one or more sensors **126** of the electronic device **100**, reactions of a user of the electronic device **100** to the plurality of user interface elements **131**. In one or more embodiments, the sensory perception score manager **102** then determines a user sensory preference reaction score **118** from the reactions to the plurality of user interface elements **131**. Moreover, when the one or more sensors **126** identify an authorized user of the electronic device **100** using the electronic device **100**, the sensory perception score manager **102** can determine a dominant sensory profile **119** associated with the authorized user. The dominant sensory profile **119** can be stored in the sensory perception score manager **102**, in the memory **112**, or elsewhere.

[0056] Thereafter, an interface element modifier **130** can modify one or more other user interface elements **120** as a function of the dominant sensory profile **119** associated with the authorized user of the electronic device **100** to create one or more modified user interface elements **104**. An interface element presenter **111** can then cause the user interface **123** to present the one or more modified user interface elements **104**.

[0057] In one or more embodiments, the one or more modified user interface elements **104** are enhanced as a function of a first combination of a visual appearance preferred by the authorized user of the electronic device **100**, an olfactory appearance preferred by the authorized user of the electronic device **100**, an aural appearance preferred by the authorized user of the electronic device **100**, a gustatory appearance preferred by the authorized user of the electronic device **100**, and a haptic appearance preferred by the authorized user of the electronic device **100** and diminished as a second combination of the visual appearance preferred by the authorized user of the electronic device **100**, the olfactory appearance preferred by the authorized user of the electronic device **100**, the aural appearance preferred by the authorized user of the electronic device **100**, the gustatory appearance preferred by the authorized user of the electronic device **100**, and the haptic appearance preferred by the authorized user of the electronic device **100**. In one or more embodiments, the one or more modified user interface elements **104** comprise text that is different from the one or more user interface elements.

[0058] To illustrate by example, turn now to FIGS. **7-11**. Illustrated in each figure is the electronic device **100** presenting a modified user interface element. In FIG. **7**, a first modified user interface element **104a** is being presented, while in FIG. **8** a second modified user interface element **104b** is being presented. In FIG. **9**, a third modified user interface element **104c** is being presented, while a fourth user interface element **104d** is being presented in FIG. **10**. In FIG. **11**, a fifth modified user interface element **104e** is being presented.

[0059] Each modified user interface element **104a**, **104b**, **104c**, **104d**, **104e** is an advertisement for Buter's Fancies Clothing. However, in other embodiments the modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** can take other forms. Illustrating by example, in one or more embodiments the modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** comprise user input controls. In other embodiments, the modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** comprise navigational elements. In still other embodiments, the modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** comprise containers. Of course, these explanatory examples of modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** can be used in various combinations, with multiple modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** being presented on a user interface of the electronic device **100**. Moreover, other examples of modified user interface elements **104a**, **104b**, **104c**, **104d**, **104e** will be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0060] In this illustrative example, each modified user interface element **104a**, **104b**, **104c**, **104d**, **104e** comprises text that is different from each other modified user interface element **104a**, **104b**, **104c**, **104d**, **104e**. Importantly, the text results in each modified user interface element **104a**, **104b**, **104c**, **104d**, **104e** catering to a particular sense, and enhancing a characteristic associated with at

least one user sensory element and diminishing another characteristic associated with at least one other user sensory element.

[0061] The modified user interface element **104***a* of FIG. **7** caters to sight, asking the user to "SEE yourself in a new light," which caters to a sight-based user sensory element. By contrast, the modified user interface element **104***b* of FIG. **8** asks the user to "LISTEN to the rhythm" of fashion as Buster's fabrics "whisper" elegant tales, thereby catering to an ear-based user sensory element.

[0062] The modified user interface element **104***c* of FIG. **9** caters to touch, asking the user to "FEEL the luxurious touch" of the garments that "embrace your body." These descriptors or touch cater to a touch-based user sensory element. By contrast, the modified user interface element **104***d* of FIG. **10** asks the user to "TASTE the flavor of fashion" as Buster's fabrics "spice up" your wardrobe, thereby catering to an ear-based user sensory element.

[0063] In FIG. **11**, the modified user interface element **104***e* asks the user to "BREATHE in" the essence of fashion by choosing clothing that "exudes a captivating scent" of sophistication and allure, thereby catering to a smell-based user sensory element. These examples are illustrative only, as numerous others will be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0064] Turning now back to FIG. **1**, in one or more embodiments, the user sensory preference reaction score **118** is determined using a combination of scores corresponding to each of the senses. Illustrating by example, in one or more embodiments the user sensory preference reaction score **118** is determined using an eye-minded dominance score, a smell-minded dominance score, an ear-minded dominance score, a taste-minded dominance score, and a motor-minded dominance score. In one or more embodiments, the sensory perception score manager **102** normalizes the eye-minded dominance score, the smell-minded dominance score, the ear-minded dominance score, the taste-minded dominance score, and the motor-minded dominance score so that each heat spreader a value between one and negative one, inclusive.

[0065] In one or more embodiments, the sensory perception score manager **102** allows a user **140** to adjust the user sensory preference reaction score **118** by delivering user input **141** to the user interface **123**. Illustrating by example, in one or more embodiments the sensory perception score manager **102** can present the user sensory preference reaction score **118** on the user interface **123**. The user interface **123** can then receive user input **141** in response to this presentation. The sensory perception score manager **102** can then adjust one or more sensory element preference elements of the user sensory preference reaction score **118** as a function of the user input **141**.

[0066] Turning briefly to FIG. **12**, illustrated therein is the electronic device **100** presenting the user sensory preference reaction score **118** on the user interface **123**. In this illustrative embodiment, the user sensory preference reaction score **118** has been broken down into sensory preference elements, namely, the eye-minded dominance score, the ear-minded dominance score, the motor-minded dominance score, the smell-minded dominance score, and the taste-minded dominance score so that the user **140** can see each individual score. By delivering user input (**141**) to adjustment user actuation targets **1201**, the user **140** can adjust the one or more sensory preference elements so that the user sensory preference reaction score **118** is changed as a function of the user input.

[0067] Turning now back to FIG. **1**, in one or more embodiments the interface element modifier **130** can modify the one or more user interface elements **120** configured for presentation on the user interface **123** of the electronic device **100** as a function of a dominant sensory profile **119** associated with the user **140** of the electronic device **100** to create one or more modified user interface element **104**. Thereafter, the interface element presenter **111** can present the one or more modified user interface elements **104** on the user interface **123**, as was illustrated above in FIGS. **7-11**. When the one or more user interface elements **120** configured for presentation on the user interface **123** of the electronic device **100** comprise informational components comprising text, as was the case in FIGS. **7-11**, the interface element modifier **130** can change the text to enhance a characteristic associated with at least one user sensory preference element and diminish another

characteristic associated with at least one other user sensory preference element.

[0068] The executable software code used by the one or more processors **106** can be configured as one or more modules **113** that are operable with the one or more processors **106**. Such modules **113** can store instructions, control algorithms, and so forth.

[0069] In one or more embodiments, these modules **113** identify high dominance and low dominance factors for each sense. In one or more embodiments, the sensory perception score manager **102** then, for each factor, calculates a score based upon user behavior. For instance, if a user always wears a noise canceling headset, even when that headset is not being used to deliver audio to the user, the sensory perception score manager **102** might calculate a low score for the ear-minded dominance score.

[0070] In one or more embodiments, the sensory perception score manager **102** considers weights **105**. For instance, the sensory perception score manager **102** may multiply each of the eye-minded dominance score, the smell-minded dominance score, the ear-minded dominance score, the taste-minded dominance score, and the motor-minded dominance score by a weight since not all factors are the same. To illustrate by example, wearing a noise canceling headset may carry more weight in an ear-minded dominance score than does the fact that the user **140** actuates enhanced stereo sound from an audio output device of the other components **121**.

[0071] Once this is complete, the sensory perception score manager **102** can sum all the scores to determine the user sensory preference reaction score **118**. In one or more embodiments, the sensory perception score manager **102** normalizes the user sensory preference reaction score **118** to a value of between negative one and positive one to ensure scores can be compared against senses.

[0072] To graphically illustrate how the user sensory preference reaction score **118** can be determined, turn briefly to FIG. **4**. In one or more embodiments, the user sensory preference reaction score **118** is determined using an eye-minded dominance score **401**, a smell-minded dominance score **402**, an ear-minded dominance score **403**, a taste-minded dominance score **404**, and a motor-minded dominance score **405**. In one or more embodiments, each of the eye-minded dominance score **401**, smell-minded dominance score **402**, ear-minded dominance score **403**, taste-minded dominance score **404**, and motor-minded dominance score **405** can be normalized to have a value between one and negative one, inclusive.

[0073] In one or more embodiments, each of the eye-minded dominance score **401**, smell-minded dominance score **402**, ear-minded dominance score **403**, taste-minded dominance score **404**, and motor-minded dominance score **405** is comprised of different factors, with some having higher weights than others. To illustrate a few examples, turn briefly to FIG. **5**. Illustrated therein are some "higher factors" **501,502,503** for the eye-minded dominance score **401**, the ear-minded dominance score **403**, and the motor-minded dominance score **405**, as well as some "lower factors" **504,505,506** for the eye-minded dominance score **401**, the ear-minded dominance score **403**, and the motor-minded dominance score **405**. As noted above, in many cases these factors **501**, **502**, **503**, **504**, **505**, **506** can be weighted since not all factors are considered the same.

[0074] Examples of higher factors **501** for the eye-minded dominance score **401** include high usage of video applications, actively changing wall papers and screen saver images, heavy use of high-definition and 4K resolution, and using hue lights on connected companion devices. These higher factors **501** tend to demonstrate that the dominant sensory profile (**119**) caters to visual sensory perception. By contrast, lower factors **504** for the eye-minded dominance score **401** include actively lowering the brightness of the display, turning on a "dark only" color scheme, and failing to direct their gaze toward the display even when videos are playing. These lower factors **504** tend to demonstrate that the dominant sensory profile (**119**) diminishes the importance of visual sensory perception.

[0075] Turning to the ear-minded dominance score **403**, the higher factors **502** indicating that the dominant sensory profile (**119**) cates to aural sensory perception include the user continually turning on audio enhancement features such as Dolby.sup.TM ATMOS.sup.TM, the usage of high-

end audio companion electronic devices, the use of noise canceling headsets, large consumption of audio content, and continually playing music on home companion electronic devices. Lower factors **505** demonstrating that the dominant sensory profile (**119**) diminishes the importance of aural sensory perception include the fact that the volume setting is continually turned down, the fact that headsets or earbuds are almost never, or never, connected to the electronic device, the fact that a user wears a noise-canceling headset with no audio output, and the fact that a user plays games without any audio output.

[0076] Turning to the motor-minded dominance score **405**, higher factors **503** demonstrating that the dominant sensory profile (**119**) indicates that a person is touch motivated include having haptic features turned ON so that the devices buzzes and vibrates, the fact that "live" wallpapers are selected, the fact that the user continually fidgets with the electronic device, either spinning a candy bar device, continually opening and closing a hinged electronic device having a first device housing that is pivotable relative to a second device housing between an axially displaced open position and a closed position, or continually moving a slidable display, the fact that the user enjoys virtual reality applications and companion electronic devices, the fact that the user interacts with videos and images or actively seeks the consumption of video content, and the fact that the user continually uses the device while traveling. Lower factors **506** indicating that the dominant sensory profile (**119**) is not sensitive to touch include the fact that the user has turned off all haptic devices or is not into gaming.

[0077] The examples of factors for three of the five minded dominance scores in FIG. **5** are illustrative only and are intended to provide information concerning how each of the eye-minded dominance score **401**, smell-minded dominance score (**402**), ear-minded dominance score **403**, taste-minded dominance score (**404**), and motor-minded dominance score **405** can be calculated. Numerous others will be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0078] Turning now back to FIG. **1**, in one or more embodiments the one or more processors **106** are responsible for running the operating system environment **114**. The operating system environment **114** can include a kernel, one or more drivers, and an application service layer **115**, and an application layer **116**. The operating system environment **114** can be configured as executable code operating on one or more processors or control circuits of the electronic device **100**.

[0079] The application service layer **115** can be responsible for executing application service modules. The application service modules may support one or more applications **117** or "apps." Examples of such applications include a cellular telephone application for making voice telephone calls, a web browsing application configured to allow the user to view webpages on the display **101** of the electronic device **100**, an electronic mail application configured to send and receive electronic mail, a photo application configured to organize, manage, and present photographs on the display **101** of the electronic device **100**, and a camera application for capturing images with the imager **109**. Collectively, these applications constitute an "application suite." In one or more embodiments, these applications comprise one or more e-commerce applications **124** and/or shopping applications **125** that allow electronic commerce orders to be placed and financial transactions to be made using the electronic device **100**. In one or more embodiments, the one or more e-commerce applications **124** and/or shopping applications **125** can be responsible for generating the one or more user interface elements **120** that are modified by the interface element modifier **130**.

[0080] In one or more embodiments, the one or more processors **106** are responsible for managing the applications and all personal information received from the user interface **123** that is to be used by the e-commerce application **124** and/or electronic shopping application **125** after the electronic device **100** is authenticated as a secure electronic device and the user identification credentials have triggered an electronic payment transaction request to complete an electronic shopping cart

interaction event. The one or more processors **106** can also be responsible for launching, monitoring, and killing the various applications and the various application service modules. In one or more embodiments, the one or more processors **106** are operable to not only kill the applications, but also to expunge any and all personal data, data, files, settings, or other configuration tools when the electronic device **100** is reported stolen or when the e-commerce application **124** and/or electronic shopping application **125** are used with fraudulent activity to wipe the memory **112** clean of any personal data, preferences, or settings of the person previously using the electronic device **100**.

[0081] The one or more processors **106** can also be operable with other components **121**. The other components **121**, in one embodiment, include input components, which can include acoustic detectors as one or more microphones. The one or more processors **106** may process information from the other components **121** alone or in combination with other data, such as the information stored in the memory **112** or information received from the user interface.

[0082] The other components **121** can include a video input component such as an optical sensor, another audio input component such as a second microphone, and a mechanical input component such as button. The other components **121** can include one or more sensors **126**, which may include key selection sensors, touch pad sensors, capacitive sensors, motion sensors, and switches. Similarly, the other components **121** can include video, audio, and/or mechanical outputs.

[0083] The one or more sensors **126** may include, but are not limited to, accelerometers, touch sensors, surface/housing capacitive sensors, audio sensors, and video sensors. Touch sensors may be used to indicate whether the electronic device **100** is being touched at side edges. The other components **121** of the electronic device can also include a device interface to provide a direct connection to auxiliary components or accessories for additional or enhanced functionality and a power source, such as a portable battery, for providing power to the other internal components and allow portability of the electronic device **100**.

[0084] In one or more embodiments, each of the sensory perception score manager **102**, the interface element modifier **130**, and the interface element presenter **111** can be operable with one or more processors **106**, configured as a component of the one or more processors **106**, or configured as one or more executable code modules operating on the one or more processors **106**. In other embodiments, the sensory perception score manager **102**, the interface element modifier **130**, and the interface element presenter **111** can be standalone hardware components operating executable code or firmware to perform their functions. Other configurations for the sensory perception score manager **102**, the interface element modifier **130**, and the interface element presenter **111** will be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0085] It is to be understood that FIG. **1** is provided for illustrative purposes only and for illustrating components of one electronic device **100** in accordance with embodiments of the disclosure and is not intended to be a complete schematic diagram of the various components required for an electronic device. Therefore, other electronic devices in accordance with embodiments of the disclosure may include various other components not shown in FIG. **1** or may include a combination of two or more components or a division of a particular component into two or more separate components, and still be within the scope of the present disclosure.

[0086] Turning now to FIG. **2**, illustrated therein is one explanatory method **200** in accordance with one or more embodiments of the disclosure. The method **200** is suitable, for example, to operate in the electronic device (**100**) of FIG. **1**. In other embodiments, the method **200** could be implemented by the cloud server shown in communication with the electronic device (**100**) of FIG. **1** across a network. Other configurations for executing the method **200** of FIG. **2** will be obvious to those of ordinary skill in the art having the benefit of this disclosure.

[0087] Beginning at step **201**, one or more sensors of an electronic device identify an authorized user of the electronic device using the electronic device. At step **202**, one or more processors of the electronic device present, on a user interface, a plurality of user interface elements. In one or more

embodiments, each user interface element of the plurality of user interface elements includes components catering to a different sensory perception from other user interface elements of the plurality of user interface elements.

[0088] At step **203**, the method **200** measures, using one or more sensors, reactions of the authorized user of the electronic device to the plurality of user interface elements. At step **204**, the method **200** determines, from the reactions, a user sensory preference reaction score.

[0089] In one or more embodiments, the user sensory preference reaction score is determined using an eye-minded dominance score, a smell-minded dominance score, an ear-minded dominance score, a taste-minded dominance score, and a motor-minded dominance score, as noted above with reference to FIG. **4**. In one or more embodiments, each of the eye-minded dominance score, the smell-minded dominance score, the ear-minded dominance score, the taste-minded dominance score, and the motor-minded dominance score is normalized at step **204** to have a value of between one and negative one, inclusive.

[0090] In one or more embodiments, the user sensory preference reaction score determined at step **204** is also associated with a dominant sensory profile associated with the authorized user of the electronic device. At step **205**, one or both of the user sensory preference reaction score and/or dominant sensory profile can eb stored in a memory of the electronic device with a user profile belonging to the authorized user of the electronic device.

[0091] Step **206** then repeats the method **200** each time a different user is detected using the electronic device. Accordingly, in one or more embodiments step **206** comprises one or more sensors detecting another user using the electronic device, repeating the presentation of step **202**, measuring other reactions similar to step **203**, and determining another user sensory preference reaction score as in step **204**. Step **206** can then comprise associating the other user sensory preference reaction score with another display associated with the other user and storing that dominant sensory profile and/or user sensory preference reaction score in the memory as in step **205**.

[0092] Turning now to FIG. **3**, illustrated therein is a system flow diagram showing how the user sensory preference reaction score can be calculated. As shown, a plurality of user interface elements **301,302,303** are presented to a user on a user interface. Each user interface element of the plurality of user interface elements **301,302,303** caters to components **304,305,306** different sensory perceptions than do other user interface element of the plurality of user interface elements **301,302,303**.

[0093] At step **203**, one or more sensors of an electronic device can measure reactions of a user to the plurality of user interface elements **301,302,303**. Step **204**, which can optionally be performed using the assistance of a generative artificial intelligence engine **307**, determine the user sensory preference reaction score **118**.

[0094] In this illustrative embodiment, the user sensory preference reaction score **118** is determined using an eye-minded dominance score **401**, a smell-minded dominance score **402**, an ear-minded dominance score **403**, a taste-minded dominance score **404**, and a motor-minded dominance score **405**, each of which is normalized to have a value of between one and minus one, inclusive. Step **205** and step **206** are then performed as described above with reference to FIG. **2**.

[0095] As graphically illustrated in FIG. **3**, in one or more embodiments a method comprises presenting, by one or more processors on a user interface, a plurality of user interface elements **301,302,303**. In one or more embodiments each user interface element of the plurality of user interface elements **301,302,303** includes components **304,305,306** catering to different sensory perceptions from other user interface elements of the plurality of user interface elements **301,302,303**. Step **203** then comprises measuring, by one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements **301,302,303**. Step **204** determines, by the one or more processors from the reactions, a user sensory preference reaction score **118**. Step **205** then stores the user sensory preference reaction score in a memory of the electronic device.

When combined with the feature described above with reference to FIG. **12**, the system of FIG. **3** can also adjust, by the one or more processors, the user sensory preference reaction score **118** in response to user input received at the user interface.

[0096] Turning now to FIG. **6**, illustrated therein is a method **600** of modifying user interface elements once the user sensory preference reaction score has been calculated using any of the methods described above with reference to FIGS. **1**-**3**. While those methods determined the user sensory preference reaction score, and optionally the dominant sensory profile, the method **600** of FIG. **6** uses these elements to modify user interface elements to create modified user interface elements.

[0097] Beginning at step **601**, one or more sensors of an electronic device identify a particular user operating the electronic device. At step **602**, one or more processors of an electronic device retrieve the user sensory preference reaction score, or dominant sensory profile associated with that user from a memory orientation detector ethe electronic device. At step **603**, the one or more processors determine to which sensory perceptions user interface elements should cater for that particular user from the user sensory preference reaction score or dominant sensory profile.

[0098] At step **604**, the one or more processors of the electronic device modify one or more user interface elements, which can be any of input controls **607**, navigational elements **608**, informational components **609**, or containers **610**, that are configured for presentation on the user interface of the electronic device. In one or more embodiments, step **604** makes this modification as a function of the user sensory preference reaction score or dominant sensory profile to create one or more modified user interface elements.

[0099] At step **605**, the one or more processors dynamically construct a user interface presentation by blending the elements such that some elements are enhanced, and some other elements are diminished. Illustrating by example, step **605** can result in the one or more modified user interface elements being enhanced as a function of a first combination of a visual appearance preferred by the authorized user of the electronic device, an olfactory appearance preferred by the authorized user of the electronic device, an aural appearance preferred by the authorized user of the electronic device, a gustatory appearance preferred by the authorized user of the electronic device, and a haptic appearance preferred by the authorized user of the electronic device and diminished as a second combination of the visual appearance preferred by the authorized user of the electronic device, the olfactory appearance preferred by the authorized user of the electronic device, the aural appearance preferred by the authorized user of the electronic device, the gustatory appearance preferred by the authorized user of the electronic device, and the haptic appearance preferred by the authorized user of the electronic device, and so forth. The resulting user interface presentation can then be presented to a user. When decision **606** determines that a new user is using the electronic device, the method **600** can repeat.

[0100] Turning now to FIG. **13**, illustrated therein are various embodiments of the disclosure. The embodiments of FIG. **13** are shown as labeled boxes in FIG. **13** due to the fact that the individual components of these embodiments have been illustrated in detail in FIGS. **1**-**12**, which precede FIG. **13**. Accordingly, since these items have previously been illustrated and described, their repeated illustration is no longer essential for a proper understanding of these embodiments. Thus, the embodiments are shown as labeled boxes.

[0101] At **1301**, a method in an electronic device comprises presenting, by one or more processors on a user interface, a plurality of user interface elements. At **1301**, each user interface element of the plurality of user interface elements includes components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements.

[0102] At **1301**, the method comprises measuring, by one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements. At **1301**, the method comprises determining, by the one or more processors from the reactions, a user sensory preference reaction score.

[0103] At **1302**, the user sensory preference reaction score of **1301** is determined using an eye-minded dominance score, a smell-minded dominance score, an ear-minded dominance score, a taste-minded dominance score, and a motor-minded dominance score. At **1303**, each of the eye-minded dominance score, the smell-minded dominance score, the ear-minded dominance score, the taste-minded dominance score, and the motor-minded dominance score of **1302** is normalized to have a value between one and negative one, inclusive.

[0104] At **1304**, the method of **1301** further comprises presenting, by the one or more processors, the user sensory preference reaction score on the user interface. At **1304**, the method comprises receiving, by the user interface, user input in response to the presenting. At **1304**, the method at least some comprises adjusting one or more sensory preference elements of the user sensory preference reaction score as a function of the user input.

[0105] At **1305**, the plurality of user interface elements of **1301** comprises one or more of user input controls, navigational elements, and/or containers. At **1306**, the plurality of user interface elements of **1301** comprises text, with the text of at least one user interface element enhancing a characteristic associated with at least one user sensory element and diminishing another characteristic associated with at least one other user sensory element.

[0106] At **1307**, the method of **1301** further comprises associating the user preference sensory preference score with a dominant sensory profile associated with the user of the electronic device a memory of the electronic device. At **1308**, the method of **1307** further comprises detecting, by the one or more sensors, another user using the electronic device, repeating the presenting the plurality of user interface elements, measuring other reactions of the other user of the electronic device to the plurality of user interface elements, and determining, by the one or more processors from the other reactions, another user sensory preference reaction score. At **1309**, the method of **1308** further comprises associating the other user preference sensory preference score with another dominant sensory profile associated with the other user in the memory of the electronic device.

[0107] At **1310**, the method of **1307** further comprises modifying, by the one or more processors, one or more other user interface elements configured for presentation on the user interface of the electronic device as a function of the dominant sensory profile associated with the user of the electronic device to create one or more modified user interface elements and presenting, by the one or more processors on the user interface of the electronic device, the one or more modified user interface elements.

[0108] At **1311**, the one or more other user interface elements of **1310** are configured for presentation on the user interface of the electronic device comprise informational components comprising text. At **1311**, the modifying the one or mor other user interface elements to create the one or more modified user interface elements comprises changing the text to enhance a characteristic associated with at least one user sensory preference element and diminish another characteristic associated with at least one other user sensory preference element.

[0109] At **1312**, an electronic device comprises a user interface, a memory, one or more sensors, and one or more processors operable with the user interface, the memory, and the one or more sensors. At **1312**, the one or more processors are configured to, when the one or more sensors identify an authorized user of the electronic device using the electronic device, determine a dominant sensory profile associated with the authorized user and store the dominant sensory profile associated with the authorized user in the memory of the electronic device.

[0110] At **1313**, the one or more processors of **1312** are configured to cause the user interface to present a plurality of user interface elements. At **1313**, the one or more processors are configured to determine, using the one or more sensors, reactions of the authorized user in response to presentation of the plurality of user interface elements.

[0111] At **1314**, each user interface element of the plurality of user interface elements of **1313** includes components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements. At **1315**, the one or more processors of **1314** are further

configured to modify one or more other user interface elements as a function of the dominant sensory profile associated with the authorized user of the electronic device to create one or more modified user interface elements and, thereafter, cause the user interface to present the one or more modified user interface elements.

[0112] At **1316**, the one or more modified user interface elements of **1315** are enhanced as a function of a first combination of a visual appearance preferred by the authorized user of the electronic device, an olfactory appearance preferred by the authorized user of the electronic device, an aural appearance preferred by the authorized user of the electronic device, a gustatory appearance preferred by the authorized user of the electronic device, and a haptic appearance preferred by the authorized user of the electronic device and diminished as a second combination of the visual appearance preferred by the authorized user of the electronic device, the olfactory appearance preferred by the authorized user of the electronic device, the aural appearance preferred by the authorized user of the electronic device, the gustatory appearance preferred by the authorized user of the electronic device, and the haptic appearance preferred by the authorized user of the electronic device. At **1317**, the one or more modified user interface elements of **1315** comprise text that is different from the one or more user interface elements.

[0113] At **1318**, a method in an electronic device comprises presenting, by one or more processors on a user interface, a plurality of user interface elements. At **1318**, each user interface element of the plurality of user interface elements includes components caters to different sensory perceptions from other user interface elements of the plurality of user interface elements.

[0114] At **1318**, the method comprises measuring, by one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements. At **1318**, the method comprises determining, by the one or more processors from the reactions, a user sensory preference reaction score. At **1318**, the method comprises storing the user sensory preference reaction score in a memory of the electronic device.

[0115] At **1319**, the method of **1318** further comprises, after the storing, modifying, by the one or more processors, one or more other user interface elements configured for presentation on the user interface as a function of the user sensory preference reaction score to create a one or more modified user interface element. At **1319**, the method comprises presenting, by the one or more processors on the user interface, the one or more modified user interface elements. At **1320**, the method of **1319** further comprises adjusting, by the one or more processors, the user sensory preference reaction score in response to user input received at the user interface.

[0116] In the foregoing specification, specific embodiments of the present disclosure have been described. However, one of ordinary skill in the art appreciates that various modifications and changes can be made without departing from the scope of the present disclosure as set forth in the claims below. Thus, while preferred embodiments of the disclosure have been illustrated and described, it is clear that the disclosure is not so limited. Numerous modifications, changes, variations, substitutions, and equivalents will occur to those skilled in the art without departing from the spirit and scope of the present disclosure as defined by the following claims.

[0117] Consider an example. Imagine that a clothing company called "Amble" has been in the fashion industry for more than a decade. Now imagine that they recently brought in consultants and tasked the to help them reimagine the brand. The scope of this work included not only rebranding, but also providing recommendations to improve their on-line presence and electronic device applications.

[0118] The consultants start understanding the brand better by talking to senior leaders across the company. In addition to looking at cognitive, affective, and social angles, it becomes evident to the consultants that the company needs to explore sensory branding. Being a fashion house, it becomes clear that the company can focus on more than one sense in this sensory branding. The texture of the clothing line appeals to the sense of touch, while the vibrant colors appeal to the sense of sight, and so forth. As such, the consultants start debating a new tag line for the company. Examples

include "experience the essence of style: see the elegance, hear the whispers of fashion, feel the fabric's embrace, taste the versatility, and breathe in the confidence with Amble."

[0119] However, they realize that this will not work. Similar debates continue in reimagining the Amble application for portable electronic devices. It becomes clear that the agency needs to work to understand its customers better, and to tailor for each customer type a sensory perspective. The consultants need to understand the more dominant sensor of each consumer so they can adapt. Unfortunately, until the present disclosure, prior art devices provided no access to this information. Advantageously, embodiments of the disclosure not only measure a user sensory preference reaction score, and optionally a dominant sensory profile, by which user interface elements can be modified to personally tailor content offerings to the sensory perceptions preferred by a user. Indeed, embodiments of the disclosure render the need for such consultants unnecessary, as one or more processors of an electronic device can automatically make such sensory determinations.

[0120] Accordingly, the specification and figures are to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included within the scope of present disclosure. The benefits, advantages, solutions to problems, and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential features or elements of any or all the claims.

Claims

1. A method in an electronic device, the method comprising: presenting, by one or more processors on a user interface, a plurality of user interface elements, with each user interface element of the plurality of user interface elements including components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements; measuring, by one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements; and determining, by the one or more processors from the reactions, a user sensory preference reaction score.

2. The method of claim 1, wherein the user sensory preference reaction score is determined using: an eye-minded dominance score; a smell-minded dominance score; an ear-minded dominance score; a taste-minded dominance score; and a motor-minded dominance score.

3. The method of claim 2, wherein each of the eye-minded dominance score, the smell-minded dominance score, the ear-minded dominance score, the taste-minded dominance score, and the motor-minded dominance score is normalized to have a value between one and negative one, inclusive.

4. The method of claim 1, further comprising: presenting, by the one or more processors, the user sensory preference reaction score on the user interface; receiving, by the user interface, user input in response to the presenting; and adjusting one or more sensory preference elements of the user sensory preference reaction score as a function of the user input.

5. The method of claim 1, wherein the plurality of user interface elements comprises one or more of: user input controls; navigational elements; and/or containers.

6. The method of claim 1, wherein the plurality of user interface elements comprises text, with the text of at least one user interface element enhancing a characteristic associated with at least one user sensory element and diminishing another characteristic associated with at least one other user sensory element.

7. The method of claim 1, further comprising associating the user preference sensory preference score with a dominant sensory profile associated with the user of the electronic device a memory of the electronic device.

8. The method of claim 7, further comprising: detecting, by the one or more sensors, another user using the electronic device; repeating the presenting the plurality of user interface elements; measuring other reactions of the another user of the electronic device to the plurality of user

interface elements; and determining, by the one or more processors from the other reactions, another user sensory preference reaction score.

9. The method of claim 8, further comprising associating the another user preference sensory preference score with another dominant sensory profile associated with the another user in the memory of the electronic device.

10. The method of claim 7, further comprising: modifying, by the one or more processors, one or more other user interface elements configured for presentation on the user interface of the electronic device as a function of the dominant sensory profile associated with the user of the electronic device to create one or more modified user interface elements; and presenting, by the one or more processors on the user interface of the electronic device, the one or more modified user interface elements.

11. The method of claim 10, wherein: the one or more other user interface elements configured for presentation on the user interface of the electronic device comprise informational components comprising text; and the modifying the one or more other user interface elements to create the one or more modified user interface elements comprises changing the text to enhance a characteristic associated with at least one user sensory preference element and diminish another characteristic associated with at least one other user sensory preference element.

12. An electronic device, comprising: a user interface; a memory; one or more sensors; and one or more processors operable with the user interface, the memory, and the one or more sensors; wherein the one or more processors are configured to, when the one or more sensors identify an authorized user of the electronic device using the electronic device, determine a dominant sensory profile associated with the authorized user and store the dominant sensory profile associated with the authorized user in the memory of the electronic device.

13. The electronic device of claim 12, wherein the one or more processors are configured to cause the user interface to present a plurality of user interface elements and determine, using the one or more sensors, reactions of the authorized user in response to presentation of the plurality of user interface elements.

14. The electronic device of claim 13, wherein each user interface element of the plurality of user interface elements includes components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements.

15. The electronic device of claim 14, wherein the one or more processors are further configured to modify one or more other user interface elements as a function of the dominant sensory profile associated with the authorized user of the electronic device to create one or more modified user interface elements and, thereafter, cause the user interface to present the one or more modified user interface elements.

16. The electronic device of claim 15, wherein the one or more modified user interface elements are enhanced as a function of a first combination of a visual appearance preferred by the authorized user of the electronic device, an olfactory appearance preferred by the authorized user of the electronic device, an aural appearance preferred by the authorized user of the electronic device, a gustatory appearance preferred by the authorized user of the electronic device, and a haptic appearance preferred by the authorized user of the electronic device and diminished as a second combination of the visual appearance preferred by the authorized user of the electronic device, the olfactory appearance preferred by the authorized user of the electronic device, the aural appearance preferred by the authorized user of the electronic device, the gustatory appearance preferred by the authorized user of the electronic device, and the haptic appearance preferred by the authorized user of the electronic device.

17. The electronic device of claim 15, wherein the one or more modified user interface elements comprise text that is different from the one or more user interface elements.

18. A method in an electronic device, the method comprising: presenting, by one or more processors on a user interface, a plurality of user interface elements, wherein each user interface

element of the plurality of user interface elements includes components catering to different sensory perceptions from other user interface elements of the plurality of user interface elements; measuring, by one or more sensors, reactions of a user of the electronic device to the plurality of user interface elements; determining, by the one or more processors from the reactions, a user sensory preference reaction score; and storing the user sensory preference reaction score in a memory of the electronic device.

19. The method of claim 18, further comprising: after the storing, modifying, by the one or more processors, one or more other user interface elements configured for presentation on the user interface as a function of the user sensory preference reaction score to create a one or more modified user interface elements; and presenting, by the one or more processors on the user interface, the one or more modified user interface elements.

20. The method of claim 19, further comprising adjusting, by the one or more processors, the user sensory preference reaction score in response to user input received at the user interface.