[0001] In ~~a first~~an aspect of the present ~~invention~~disclosure, a computer-implemented method for determining whether or not an event is going to aggravate using a sensor operationally coupled to a processor is disclosed. The method includes receiving, from the sensor, event information identifying a type of the event and location information identifying a location at which the event is occurring, collecting, from the sensor, information around the location in response to the location information, analyzing, at the processor, the information around the location, and determining whether or not the event is going to aggravate, at the processor, based on a result of the analysis, wherein analyzing the information comprises: identifying, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd; categorizing, based on at least one of people, things and sound included in each of the information around the location, and the crowd information, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event; categorizing, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor; and predicting a future outcome based on the categorized factors.

[0002] In ~~a second~~an aspect of the present ~~invention~~disclosure, a system for determining whether or not an event is going to aggravate using a sensor operationally coupled to a processor is disclosed. The system includes means for receiving event information identifying a type of the event and location information identifying a location at which the event is occurring, means for collecting information around the location in response to the location information, means for analyzing the information around the location, and means for determining whether or not the event is going to aggravate, based on a result of the analysis, wherein the means for analyzing the information comprises means for identifying, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd, wherein the means for analyzing the information comprises means for categorizing, based on at least one of people, things and sound included in each of the information around the location, and the crowd ~~each~~information, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event, wherein the means for categorizing is further configured to categorize, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor, and wherein the means for analyzing the information further predicts a future outcome based on the categorized factors.

[0003] In ~~a third~~ an aspect of the present ~~invention~~disclosure, a computer system for determining whether or not an event is going to aggravate is disclosed. The computer system includes a memory device for storing data, a display, and at least one processor coupled to the memory device. The at least one processor is configured to receive event information identifying a type of the event and location information identifying a location at which the event is occurring, receive event information identifying a type of an event and location information identifying a location at which the event is occurring, analyze the information around the location, and determine whether or not the event is going to aggravate based on a result of the analysis, wherein the at least one processor is further configured to: identify, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in

the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd; categorize, based on at least one of people, things and sound included in each of the information around the location, and the crowd information, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event; categorize, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor; and predict a future outcome based on the categorized factors.

[0004] In ~~a fourth~~an aspect of the present ~~invention~~disclosure, a computer program embodied on non-transitory computer readable media for determining whether or not an event is going to aggravate is disclosed. The program includes at least one code

segment executable by a computer to instruct the computer to receive event information identifying a type of the event and location information identifying a location at which the event is occurring, receive event information identifying a type of an event and location information identifying a location at which the event is occurring, analyze the information around the location, and determine whether or not the event is going to aggravate based on a result of the analysis, identify, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd; categorize, based on at least one of people, things and sound included in each of the information around the location, and the crowd information, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event; categorize, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor; and predict a future outcome based on the categorized factors.

[0005] Unless context dictates otherwise, the following terms will be given the meaning provided here:

The term “event” means an abnormal incident or situation which needs to be monitored by a surveillance system, a command center or a security company. In an example, the term “event” includes a traffic accident or a fighting. In another example, the term “event” includes a fire or natural disasters such as lighting or earthquake.

The term “event aggravation” means that an event becomes worse because of one or more factors surrounding the event. The term “event aggravation” includes a situation that an event becomes worse by itself. In an example of “event aggravation”, a quarrel becomes a fighting and then becomes a riot. In another example of “event aggravation”, a small fire becomes a big fire resulting in many casualties. That is, “event aggravation” is a situation in which an event escalates into a more serious one based on a relationship between the event and the situation around the event.

The term “escalating factor” includes people, things or conditions which have a potential to make an event escalate to be worsen. In an example, the term “escalating factor” includes a crowd near a fighting or an explosion. In another example, the term “escalating factor” includes a petrol station near a big fire.

The term “mitigating factor” includes people, things or conditions which have a potential to minimize an escalation of an event. In an example, the term “mitigating factor” includes field officers who work on controlling traffic near a traffic accident. In another example, the term “mitigating factor” includes an expected rain for a big fire.

The term “neutral factor” includes people, things or conditions which do not have any or less impact to an escalation of an event. In other words, the term “neutral factor” includes all factors which are not categorized as “escalating factor”

CLAIMS

1. A computer-implemented method for determining whether or not an event is going to aggravate using a sensor operationally coupled to a processor, the method comprising:

receiving, from the sensor, event information identifying a type of the event and location information identifying a location at which the event is occurring;

collecting, from the sensor, information around the location in response to the location information;

analyzing, at the processor, the information around the location; and

determining whether or not the event is going to aggravate, at the processor, based on a result of the analysis,

wherein analyzing the information comprises:

identifying, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd;

categorizing, based on at least one of people, things and sound included in each of the information around the location, and the crowd information, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event;

categorizing, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor; and

predicting a future outcome based on the categorized factors.

2. The method according to claim 1, wherein collecting information around the location comprises collecting information from mobile phones, video surveillance systems and internet.

3. The method according to claim 1, wherein analyzing, at the processor, the information around the location comprises analyzing the information using a video analytics and acoustic analytics.

4. The method according to claim 3, wherein analyzing, at the processor, the information around the location further comprises identifying information relating to at least one party around the location.

5. The method according to claim 3, wherein analyzing, at the processor, the information around the location further comprises identifying a traffic

situation surrounding the location of the event.

6. The method according to claim 4, wherein the information that is identified includes demographic information and location information of the at least one party.

7. A system for determining whether or not an event is going to aggravate using a sensor operationally coupled to a processor, the system comprising:

means for receiving event information identifying a type of the event and location information identifying a location at which the event is occurring;

means for collecting information around the location in response to the location information;

means for analyzing the information around the location; and

means for determining whether or not the event is going to aggravate, based on a result of the analysis, wherein the means for analyzing the information comprises means for identifying, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd, wherein the means for analyzing the information comprises means for categorizing, based on at least one of people, things and sound included in each of the information around the location, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event;

wherein the means for categorizing is further configured to categorize, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor, and

wherein the means for analyzing the information further predicts a future outcome based on the categorized factors.

8. A computer system for determining whether or not an event is going to aggravate, the computer system comprising:

a memory device for storing data;

a display; and

at least one processor coupled to the memory device and being configured to:

receive event information identifying a type of the event and location information identifying a location at which the event is occurring;

collect information around the location in response to the location information;

analyze the information around the location; and

determine whether or not the event is going to aggravate based on a result of the analysis, wherein the at least one processor is further configured to: identify, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd;

categorize, based on at least one of people, things and sound included in each of the information around the location, and the crowd information, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event; categorize, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor; and

predict a future outcome based on the categorized factors.

9. A non-transitory computer readable medium storing a computer program for determining whether or not an event is going to aggravate, the program comprising at least one code segment executable by a computer to instruct the computer to:

receive event information identifying a type of the event and location information identifying a location at which the event is occurring;

collect information around the location in response to the location information;

analyze the information around the location; and

determine whether or not the event is going to aggravate based on a result of the analysis; identify, based on the information around the location, crowd information related to a crowd around the location, wherein the crowd information includes size of the crowd, flow of the crowd, mood of the crowd, age of people in the crowd, gender of people in the crowd, a language used by the crowd and a number of the language used by the crowd; categorize, based on at least one of people, things and sound included in each of the information around the location, each of the information around the location into an escalating factor, a neutral factor or a mitigating factor to the event aggravation in view of the type of the event; categorize, when only one language is detected from the crowd, information around the location at which the event is occurring into the escalating factor; and

predict a future outcome based on the categorized factors.