

CLAIMS

I/we claim:

1. A method comprising:

- receiving a data stream of relational data;
- detecting an artifact in the data stream associated with a critical point in the relational data;
- analyzing, by a processing device, the artifact to determine a set of artifacts associated with a complex event, wherein the critical point is an endpoint of the complex event;
- calculating one or more cycle metrics based on the set of artifacts;
- generating a data structure associated with the complex event and cycle metrics; and
- providing the data structure for marking a display of the relational data with the complex event based on the cycle metrics.

2. The method of claim 1, wherein the set of artifacts comprises:

- a benchmark artifact indicating a first relational value comparable to a second relational value associated with the artifact;
- a peak artifact indicating a relative change based on the artifact, wherein the peak artifact is associated with another critical point after the benchmark artifact;
- identifying a first region based on the artifact and the benchmark artifact, wherein the first region comprises a first local peak value;
- identifying a second region based on the benchmark artifact and peak artifact.

3. The method of claim 2, wherein calculating one or more cycle metrics based on the set of artifacts comprises:

- comparing the first region and the second region to determining a growth percentage;
- determining a drop percentage associated with the artifact; and
- determining a recovery percentage.

4. The method of claim 1, wherein the marking a display comprises:

- labeling the set of artifacts with one more colors, icons, keywords, relational data, or graphical overlays.

5. The method of claim 1, further comprising:

transmitting, by the processing device, the data structure to a remote device with access to the data stream, wherein the remote device is to display the relational data marked with the set of artifacts based on the data structures and generate a display of the relational data labeled with event information based on the identified locations.

6. A method comprising:

- receiving a data stream of relational data;
- receiving a plurality of event data structures, wherein each event data structure describes a complex event and cycle metrics associated the complex event;
- identifying locations in the relational data associated with the plurality of event data structures; and
- generating a display of the relational data, wherein the display comprises identifying event information associated one or more event data structures based on one or more cycle metrics.

7. The method of claim 6, wherein the plurality of event data structures include one or more of:

- a benchmark artifact indicating a first relational value comparable to a second relational value associated with the complex event; or
- a peak artifact indicating a relative change of the complex event, wherein the peak artifact is associated with another critical point after the benchmark artifact.

8. The method of claim 6, wherein the complex event comprises:

- a first range including a benchmark artifact and a first local peak value; and
- a second range including the benchmark artifact and a peak artifact.

9. The method of claim 6, wherein identifying locations is based on matching a relational value of the relational data with a key value of at least one of the plurality of event data structures.

10. The method of claim 6, wherein the display comprising event information associated one or more event data structures is based on the one or more cycle metrics meeting a threshold.

11. The method of claim 6, wherein that displayed event information is filtered based one or more cycle metrics of the one or more event data structures to display a number of ranked events associated with a selected cycle metric.

12. The method of claim 6, further comprising:
receiving another data stream of another set of relational data;
identifying locations in the another set of relational data associated with the plurality of event data structures, wherein identifying locations in the another set of relational data comprises normalizing the another set of relational data; and
generating a display of the normalized data including the relational data with the another set of relational data to display event information at a point of the normalized data.

13. The method of claim 6, further comprising
receiving another data stream of another set of relational data; and
generating a display of the relational data with the another set of relational data to visualize discrete differences in the data streams, wherein zooming in on a region of the display determines new cycle metrics for identifying event information to display.

14. The method of claim 6, wherein the display of event information based on one or more cycle metrics includes one or more of: labels, keywords, or colors.

15. The method of claim, wherein the plurality of event data structures is received from a different source than the data stream.

16. A system comprising:

a memory;
a processing device operatively coupled to the memory, the processing device to:
receive a data stream of relational data;
detect an artifact in the data stream associated with a critical point in the relational data;
analyze the artifact to determine a set of artifacts associated with a complex event wherein the critical point is an endpoint of the complex event;
calculate one or more cycle metrics based on the set of artifacts;
generate a data structure to describe the complex event and cycle metrics; and

provide the data structure to mark a display of the relational data with the complex event based on the cycle metrics.

17. The system of claim 16, wherein the set of artifacts comprises:

a benchmark artifact indicating a relational value comparable to a relational value associated with the artifact;

a peak artifact indicating a relative change based on the artifact, wherein the peak artifact is associated with another critical point after the benchmark artifact; and

the processing device is further to:

identify a first range based on the artifact and the benchmark artifact, wherein the first range comprises a first local peak value;

identify a second range based on the benchmark artifact and peak artifact.

18. The system of claim 17, wherein to calculate one or more cycle metrics based on the set of artifacts, the processor is further to:

compare the first range and the second range to determining a growth percentage;

determine a drop percentage associated with the artifact; and

determine a recovery percentage.

19. The system of claim 16, wherein to mark a display comprises labeling the set of artifacts with one more colors, icons, keywords, relational data, or graphical overlays.

20. The system of claim 16, wherein the processor is further to transmit the data structure to a remote device with access to the data stream, wherein the remote device is to display the relational data marked with the set of artifacts based on the data structures and generate a display of the relational data labeled with event information based on the identified locations.