

Claims

1. A computer implemented emotion system of an artificial nervous system, for animating a virtual object, digital entity, or robot, comprising: a plurality of states, each state of the plurality of states representing an emotional state (ES) of the artificial nervous system; a module for processing a plurality of inputs, the processed plurality of inputs applied to the plurality of states.
2. The emotion system of claim 1, wherein the ES of the artificial nervous system are competing ES.
3. The emotion system of claim 1, wherein the level of each of the plurality states is affected by the application of the plurality of inputs.
4. The emotion system of claim 3, wherein the level of each of the plurality states represents the active emotional states of the artificial nervous system.
5. The emotion system of claim 1, wherein each of the plurality of inputs represents a neural input.
6. The emotion system of claim 5, wherein a neural input is a sensory input provided to the emotion system.
7. The emotion system of claim 6, wherein the sensory input is one of a visual, auditory, or touch input.
8. The emotion system of claim 6, wherein the sensory input is generated from a User via an input module.
9. The emotion system of claim 6, wherein the sensory input is computer generated.
10. The emotion system of claim 4, further including an output module that conveys the active emotional states of the artificial nervous system to a User in a perceptible format.
11. The emotion system of claim 10, wherein the perceptible format is one of visual and auditory.

12. The emotion system of claim 10, wherein the perceptible format is a visual two-dimensional representation of at least a portion of a mammal model.
13. The emotion system of claim 10, wherein a module for processing a plurality of inputs integrates each of the plurality of inputs over time.
14. The emotion system of claim 10, wherein a module for processing a plurality of inputs determines the rate of change of each of the plurality of inputs over time.
15. The emotion system of claim 10, wherein a module for processing a plurality of inputs determines the rate of change of each of the plurality of inputs over time, sums all the plurality of inputs together, and sums all of the plurality of inputs determined rate of change.
16. The emotion system of claim 10, wherein a module for processing a plurality of inputs integrates each of the plurality of inputs over time, sums all the plurality of inputs together, and sums integrations of all of the plurality of inputs.
17. The emotion system of claim 10, including at least three states, representing three competing ES of the artificial nervous system.
18. The emotion system of claim 17, wherein less time is required to change from the 2nd state to the 1st state than the time required to change from 1st state to the 2nd state.
19. The emotion system of claim 18, wherein less time is required to change from the 2nd state to the 3rd state than the time required to change from 3rd state to the 2nd state.
20. The emotion system of claim 19, wherein 1st state represents an anger ES, the 2nd state represents a neutral ES, and the 3rd state represents a fear ES.
21. The emotion system of claim 1, further comprising: a predictor for making predictions; an error module for computing a prediction error of the predictor; wherein the prediction error comprises an input.
22. The emotion system of claim 21, wherein the input of prediction error is configured to correspond to density of neural firing in the artificial nervous system.

23. The emotion system of claim 22, wherein the artificial nervous system is configured to enter a perturbed state in response to a sustained density of neural firing in response to prediction error.
24. The emotion system of claim 22, wherein the artificial nervous system is configured to enter a perturbed state in response to an increased density of neural firing in response to prediction error.
25. The emotion system of claims 23 or 24, wherein the artificial nervous system is configured to attempt new solution approaches in response to the perturbed state.
26. The emotion system of claims 23 or 24, wherein the perturbed state is one or more of the group comprising: being startled, fear, interest or anger.
27. The emotion system of claim 25, wherein the artificial nervous system is configured to, in response to a decrease in prediction error resulting from the new solution approaches, exit the perturbed state.
28. The emotion system of any preceding claim wherein one or more ES are represented by a network state of the artificial nervous system.
29. The emotion system of any preceding claim wherein one or more ES are represented by a dynamic pattern of network activity of the artificial nervous system.