transmitting the computed, supplemented translational velocity average as a control signal to an electronic or electromechanical device.

4. The method of claim 3, wherein the computed translation weightings of innermost and outermost fingers are constant and computed translation weightings of central fingers are inversely related to polar component speeds so as to prevent vertical translation bias while performing hand scaling and rotation but otherwise include all available fingers in the computed translational velocity average.

5. The method of claim 4, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

6. The method of claim 5, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

7. The method of claim 1 further comprising:

computing a translation weighting for each contact associated with a finger;

computing translational velocity components for each contact associated with a finger;

computing a translational velocity average from the computed translational velocity components and the computed translation weightings; and

transmitting the computed, supplemented translational velocity average as a control signal to an electronic or electromechanical device.

8. The method of claim 2, wherein the computed translation weightings of innermost and outermost fingers are constant and computed translation weightings of central fingers are inversely related to polar component speeds so as to prevent vertical translation bias while performing hand scaling and rotation but otherwise include all available fingers in the computed translational velocity average.

9. The method of claim 8, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

10. The method of claim 9, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

11. A method for extracting multiple degrees of freedom of hand motion from successive proximity images, the method comprising:

tracking a plurality of contacts associated with a plurality of hand parts across the successive proximity images;

finding an innermost finger contact and an outermost finger contact for a given hand from the plurality of contacts;

computing a rotational velocity component from a change in a vector angle between the innermost and outermost finger contacts;

supplementing the computed rotational velocity component with a measure of rotational velocity selective for symmetric rotation about a fixed point between a thumb and other fingers; and

transmitting the computed, supplemented rotational velocity component as a control signal to an electronic or electromechanical device.

12. The method of claim 11 further comprising:

computing a translation weighting for each contact associated with a finger;

computing translational velocity components for each contact associated with a finger;

computing a translational velocity average from the computed translational velocity components and the computed translation weightings; and

transmitting the computed, supplemented translational velocity average as a control signal to an electronic or electromechanical device.

13. The method of claim 12, wherein the computed translation weightings of innermost and outermost fingers are constant and computed translation weightings of central fingers are inversely related to polar component speeds so as to prevent vertical translation bias while performing hand scaling and rotation but otherwise include all available fingers in the computed translational velocity average.

14. The method of claim 13, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

15. The method of claim 14, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

16. A method for extracting multiple degrees of freedom of hand motion from successive proximity images, the method comprising:

tracking a plurality of contacts associated with a plurality of hand parts across the successive proximity images;

computing a translation weighting for each contact associated with a finger;

computing translational velocity components for each contact associated with a finger;

computing a translational velocity average from the computed translational velocity components and the computed translation weightings and transmitting the computed, supplemented translational velocity average as a control signal to an electronic or electromechanical device.

17. The method of claim 16, wherein the computed translation weightings of innermost and outermost fingers are constant and computed translation weightings of central fingers are inversely related to polar component speeds so as to prevent vertical translation bias while performing hand scaling and rotation but otherwise include all available fingers in the computed translational velocity average.

18. The method of claim 17, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

19. The method of claim 18, wherein the computed translational weightings are related to the ratio of each finger's speed to a speed of a fastest finger.

20. A method for extracting multiple degrees of freedom of hand motion from successive proximity images representing successive scans of a plurality of proximity sensors of a multi-touch surface, the method comprising:

tracking, through successive proximity images, a plurality of groups of pixels associated with a plurality of fingers on or near the multi-touch surface;