```
1: var visualSearchSTDBscan = {
2:
3:   run: function(trials, minPoints, minClusterSize, maxClusterSize){
4:     for(var i=0; i<trials.length; i++){
5:       var data = trials[i].data;
6:       var pointsToAnalyze = data.length - minPoints;
7:       var type = [];
8:
9:       // forward pass
10:       for(var j=1; j<pointsToAnalyze; j++){ // first point is Calibrate
11:         var currentPoint = j;
12:         var numInCluster = 0;
13:         for(var k=j+1; k<data.length; k++){
14:           var distance = Geometry.distance(data[currentPoint].x, data[currentPoint].y,
                 data[k].x, data[k].y);
15:           if(distance < minClusterSize){
16:             if(++numInCluster >= minPoints){
17:               break;
18:             }
19:           }
20:           else{
21:             break;
22:           }
23:         }
24:
25:         if(numInCluster >= minPoints){
26:           trials[i].data[currentPoint].type = "Fixation";
27:         }
28:         else{
29:           trials[i].data[currentPoint].type = "Saccade";
30:         }
31:       } // end for j
32:
33:       // backward pass
34:       for(var j=data.length-1; j>=minPoints; j--){
35:         var currentPoint = j;
36:         var numInCluster = 0;
37:         for(var k=j-1; k>=0; k--){
38:           var distance = Geometry.distance(data[currentPoint].x, data[currentPoint].y,
                 data[k].x, data[k].y);
39:           if(distance < minClusterSize){
40:             if(++numInCluster >= minPoints){
41:               break;
42:             }
43:           }
44:           else{
45:             break;
46:           }
47:         }
48:
49:         if(numInCluster >= minPoints){
50:           if(trials[i].data[currentPoint].type != "Saccade"){
51:             trials[i].data[currentPoint].type = "Fixation";
52:           }
53:         }
54:         else{
55:           trials[i].data[currentPoint].type = "Saccade";
56:         }
57:       } // end for j
58:     } // end for i
59:
60:     // final checking minimum fixation is equals to the minPoints
61:     for(var i=0; i<trials.length; i++){
62:       var data = trials[i].data;
63:       for(var j=0; j<data.length; j++){
64:         if(data[j].type == "Fixation"){
65:           var num = 0;
66:           var k = j+1;
67:           for(; k<data.length; k++){
68:             if(data[k].type == "Fixation"){
69:               num++;
```

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70:                    }
71:                    else{
72:                        break;
73:                    }
74:                }

76:            if(num < minPoints){
77:                for(var m=j; m<k; m++){
78:                    trials[i].data[m].type = "Saccade";
79:                }
80:            }
81:            j += num;
82:        }
83:      } // end j
84:    } // end i

86:  } // end run

88: }
```