CLAIMS

1. A wearable apparatus comprising:
a helmet having a rigid shell;
a control unit mounted to the helmet;
a folded airbag mounted to a bottom rim of the helmet;
an ignitor disposed in the folded airbag and coupled to the control unit;
a holder in which the folded airbag is disposed, wherein the holder is detachably mounted to the bottom rim of the helmet;
wherein the control unit is configured to detect an impact signal of the base and upon the impact signal reaching a predetermined threshold, the control unit activates the ignitor to inflate the folded airbag to form an inflated airbag.

2. The apparatus of claim 1, wherein upon the folded airbag being inflated, the holder is detached from the helmet.

3. The apparatus of claim 1, wherein the control unit is mounted to an external top surface of the rigid shell and having an electrical cable embedded in the shell to electrically coupling the controller and the ignitor.

4. The apparatus of claim 3, wherein the ignitor is detachably coupled to the cable and upon inflation of the folded airbag, the ignitor is detached from the cable.

5. The apparatus of claim 1, wherein the folded airbag is formed of an open loop having a first end and a second end disposed adjacent to each other, the apparatus further comprises a first fastening member mounted to the first end and a second fastening member mounted to the second end and lockable to the first fastening member to prevent the first and the second ends from separating from each other from the inflated airbag.

6. The apparatus of claim 1, wherein the control unit includes an accelerometer for detecting the impact signal, a processor coupled to the accelerometer for determining the impact signal with respect to the predetermined threshold.

7. The apparatus of claim 1, further comprising a housing into which the control unit is disposed, wherein the housing is detachably mounted to the base.

8. The apparatus of claim 1, wherein the folded airbag is shaped and dimensioned to conform to a body part of a user wearing the apparatus upon inflation.

9. The apparatus of claim 1, further comprising a one-way safety valve coupled to the folded airbag and in fluid communication with an interior of the folded airbag, wherein upon an air pressure of the inflated airbag exceeds a predetermined pressure limit, the one-way safety valve is opened to release the air pressure.

10. A method of operating a wearable apparatus, the method comprising:
executing a loop comprising:
acquiring a movement data of the wearable apparatus;
determining a Movement Index based on the movement data;
determining if the Movement Index exceeds a predetermined Movement Index threshold; and
exiting the loop and inflating a folded airbag coupled to the wearable apparatus if the Movement Index exceeds the predetermined Movement Index threshold;
wherein the Movement Index includes an Injury Index based on the inertia data.

11. The method of claim 10, wherein the movement data includes an acceleration of the wearable apparatus.

12. The method of claim 11, wherein the movement data includes a speed of the wearable apparatus.

13. The method of claim 10, wherein the loop further comprises acquiring an inertia data of the wearable apparatus, wherein said inertia data is used to determine the Movement Index.

14. The method of claim 10, wherein the Movement Index includes a Collision Index based on an acceleration the wearable apparatus.

15. The method of claim 14, wherein the Collision Index is derived based on a speed of the wearable apparatus.