Falls have been a major cause of injuries like fractures, head trauma in elder people. In many cases, these injuries have been fatal. This being a major concern of the Alzheimer Association, a Smart Carpet to detect a person's fall and accordingly generate an alarm was important. We developed faux floors and an actual floor for testing and demonstration to detect motion. We used a novel technique of signal scavenging to detect presence of the person. Aluminum foils were used as sensors as they were conducive to the applied pressure on them. Rigorous tests and experiments were performed on the faux floor sized 1m x 1m (3feet x 3feet) and 2.1m x 1m (7feet x 3feet) using these aluminum sensors. The noisy output pattern of the aluminum sensor was signal conditioned and converted into digital format using Op-Amps. The digital signal was later interfaced with a micro-controller unit and displayed onto a PC. Graphical analysis with ROC space and personal experience with utilization of the faux floor system gave us confidence to develop a real floor of the size 3.6m x 3.6m (12feet x 12feet). The results obtained on the full floor were beyond the expectations. Previously observed problems like cross-talk, noise interference and abrupt output behavior of the sensor system were avoided with careful manufacturing of carpet and earthing. With the development of the full floor, we have created a prototype which has high reliability and accuracy to detect motion and can be extensively used for further research.