题　　目：基于视频行为分析的老年人监控系统

摘要

当今世界是智能的世界，科学的社会。随着科学技术的发展，人们的家庭生活也越来越智能化。科学、科技、智能已经无所不在，人们已经离不开它们。发展科技就是为了让人们能有更好的生活。我国是世界上人口最多的国家，我国老人年绝对数量大，发展势态迅猛。这么多的老年人在日常生活中，不可能时时刻刻都能有家人或他人的相伴。

所以，为了更好地监测并及时反映老年人摔倒，或者突发疾病等意外情况。设计一个基于视频行为分析的老年人监控系统，通过摄像头来监控老年人的日常生活并通过终端处理设备、骨架提取、跌倒检测模型等进行分析学习来预防以及及时提醒子女及他人老人们可能发生的意外情况。

这样的设备具有人工智能的学习能力，能够通过视频行为的不断分析学习，提高准确性，复杂场景的辨别性以及不同情况的特殊性等等。在我国这样一个人口老龄化的大国里，这样一个设备不仅具有现实意义的能够保护老人，而且也具有良好的商业前景。本系统区别于同类跌倒检测产品更有利于推动安防智能化，有利于安防隐私化和安防私人化。

本系统设计，由 Python 和 MATLAB 共同开发，根据人体骨架等信息分析判断老人跌倒的状态。

关键词：老人；监控；系统；安全；智能；python；MATLAB

Abstract

Today's world is an intelligent world and a scientific society. People's family life is becoming more and more intelligent because the science and technology is developing fast. Science, technology and intelligence are everywhere and people cannot leave them.In order to enable people to have a better life， we are developing the science and technology . China has the largest population in the world. Not only the absolute number of elderly people in China is large but also the development trend is rapid. It is impossible for so many elderly people to have family members or others with them all the time in their daily life.

Therefore, in order to better monitor and timely reflect the elderly fall, or sudden illness and other unexpected situations. A monitoring system for the elderly based on video behavior analysis is designed. Through the camera to monitor the daily life of the elderly and through terminal processing equipment, skeleton extraction, fall detection model analysis and learning to prevent and timely remind children and other elderly people of possible accidents.

Such equipment has the learning ability of artificial intelligence, and can improve the accuracy, discrimination of complex scenes and particularity of different situations through continuous analysis and learning of video behaviors. In a country with an aging population, such a device not only has practical significance to protect the elderly, but also has good commercial prospects. This system is different from similar fall detection products and is more conducive to the promotion of intelligent security, privacy and privacy of security.

The design of this system is jointly developed by Python and MATLAB, which can analyze and judge the falling state of the elderly according to information such as human skeleton.

Keywords： The elderly; Monitoring; Systems; Security; Intelligence； python；MATLAB