Long-term behavioural modal observation and risk warning in the elderly

Chong Tian, Jie Li, Qing Yang and **Jing Mao**
Huazhong University of Science and Technology, China

Population aging is a common problem facing all over the world. China has the biggest elderly population in the world. China's population structure has started to show an inverted pyramid trend since 2010. Human resources for aged care are seriously insufficient. At the same time, due to the increase in the number of empty nested families and families that lost their only child, traditional home care functions are gradually disintegrating, most of the elderlies lives by themselves in most of the time. The elderly population faces many risks, such as falls, falling from bed, cardiovascular and cerebrovascular incidents. Prevention, in-time detection and management of these situations are critical to the life safety of the elderlies. How to ensure the safety of the elderly population in the case of limited human resources has become an important practical issue. Therefore, we focused on developing an intelligent system that can acquire, identify and analyze the behavior of the elderly and promptly alert the abnormalities. Meanwhile, corresponding emergency response and nursing protocol are developed. At present, the technologies for intelligent monitoring and early warning of the elderly mainly include: Wearable devices, 2D cameras and sensors. For wearable devices, the elderlies are easy to forget to wear, and the effect will be compromised; 2D cameras are sensitive to changes in lighting, and privacy is a great concern; Sensors are relatively expensive for most of the families in China. We tried to develop a new strategy using deep camera combined with machine learning technology. It does not affect the daily life of the elderly or change the living habits of the elderly and be work around the clock. Alert will be triggered when accidents like falling or fall off the bed happens. Moreover, interpretation of the uploaded data will provide evidence for personalized intelligent care.

e: tianchong0826@hust.edu.cn

Notes: