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Automatic Detection of Suicidal Behaviors Using an RGB-D Camera: Azure Kinect

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Abstract : Suicide is one of the most important causes of death in the prison environment, both in Canada and internationally. Rates of attempts of suicide and self-harm have been on the rise in recent years, with hangings being the most frequent method resorted to. The objective of this article is to propose a method to automatically detect in real time suicidal behaviors. We present a gesture recognition system that consists of three modules: model-based movement tracking, feature extraction, and gesture recognition using machine learning algorithms (MLA). Our proposed system gives us satisfactory results. This smart video surveillance system can help assist staff responsible for the safety and health of inmates by alerting them when suicidal behavior is detected, which helps reduce mortality rates and save lives.

Keywords : suicide detection, Kinect azure, RGB-D camera, SVM, machine learning, gesture recognition
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