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Fatigue Detection Among Operators in Industry Based on Euclidean Distance Computation Using Python Software

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Abstract:

Machine – learning is one of popular technique suitable for adaptation in Industrial Revolution 4.0 (IR4). There is a dire problem whereby increasing occupational accident especially in the manufacturing sectors. The root cause of these accidents are because of fatigue while performing repetitive task in production line. To solve this problem, a research was conducted in developing fatigue detection algorithm. The software used for this algorithm development is python software since this software is an open source software. Euclidean distance computation is utilized in this algorithm in determining the eyes and mouth aspect ratio. The eyes and mouth aspect ratio were set 0.28 and 0.60 respectively. If the eyes aspect ratio is below than 0.28, the output obtained is eyes closed. If mouth aspect ratio is higher than 0.60, than the operator is yawning and fatigue alert will appear notify the line leader in manufacturing plant.