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Face Video for Touchless Heartbeat Measuring

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Abstract: Touchless heartbeat measurement using facial video is an innovative, non-invasive method that leverages computer vision and machine learning to monitor heart rate. Unlike traditional contactbased sensors, this approach detects subtle facial color changes and micro-movements linked to blood flow and heart activity. Algorithms process the video to extract heartbeat signals and provide real-time data.

This technology is valuable in healthcare, mental health monitoring, and fitness tracking—especially where physical contact is impractical. It also supports remote and continuous monitoring, making it ideal for telemedicine and home care. While it shows reliable accuracy under controlled conditions, further improvements in algorithm robustness are needed to handle diverse environments and populations effectively.

Keywords: Touchless heartbeat measurement, Facial video, Non-invasive monitoring, Computer vision, Machine learning, Heart rate detection, Real-time monitoring, Remote healthcare



