Researchers at the University of South Florida have developed a method for measuring the pain intensity of an infant. Assessment of infant pain is used by health professionals to understand the patient’s medical condition and develop suitable treatment plans. In children, pain is usually diagnosed based on verbal self-reporting. Assessment is particularly challenging in infants because they do not have the ability to verbally communicate or articulate their pain. The process of assessment is subjectively based on the health professional’s judgement using pain assessment scales. Therefore, it would be beneficial to build an objective pain assessment system to measure an infant’s pain intensity based on physiological (e.g., vital signs) and behavior (e.g., pain expression, crying and body movements) pain indicators.

USF inventors have invented a novel system using facial expressions to continuously monitor an infant’s pain. The system also includes multimodal subsystems for assessing the infant’s pain intensity using facial expression, vital sign monitoring, body, and audio analysis. Individual scores from the above units is integrated to generate a total pain score that indicates pain intensity to potentially alert healthcare professionals.

Technology Advantages:
- Provide more consistent and objective pain assessment
- Reduce the clinical assessment and costs of continuous monitoring of infants
- Can be used as a home monitoring tool or in developing countries where there is a lack of medical workers/supplies

Machine-based Infants Pain Assessment Tool

General Overview of the multimodal machine-based infant pain assessment system.

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