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I-CReST 2025:093-060 – Integrating the Formative and Summative Evaluation in the Development of Face Recognition Attendance System

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ABSTRACT

The advancement of computer vision technologies has facilitated the development of numerous applications across various sectors, including education. Among these innovations, facial recognition stands out as a prominent application, particularly when integrated with business processes such as attendance management systems. Traditional attendance systems often suffer from inefficiencies such as being time-consuming, susceptible to manipulation, and lacking in security and data integrity. In response, automated attendance systems leveraging facial recognition aim to overcome these limitations by offering a more efficient, accurate, and secure method of attendance tracking. This paper presents our experience in the development and evaluation of a facial recognition-based attendance system, with a particular focus on the critical role of both formative and summative evaluations. Formative evaluation, conducted during the development phase through expert reviews, was instrumental in identifying design flaws and ensuring that all essential user requirements were captured. In contrast, summative evaluation, carried out via user acceptance testing after system completion, provided valuable insights into user satisfaction and system effectiveness, guiding further refinements. The integration of both formative and summative evaluations not only addresses different aspects of system quality but also ensures a more robust and user-centred system design. Employing this dual-evaluation approach enhances the reliability and practicality of face recognition-based attendance systems, aligning them with the evolving needs of modern organizations.

Keywords: Computer vision; Attendance system; Formative evaluation; Summative evaluation; System development