

Research on gender detection through images - Application for managing boarding students at Quang Ninh Province Ethnic Boarding High School

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Abstract: This study presents a computer vision-based approach for automated gender detection from facial images, specifically designed to support student management at the Quang Ninh Provincial Boarding High School for Ethnic Minorities. Leveraging deep learning techniques, particularly Convolutional Neural Networks (CNNs), the research develops and evaluates a model capable of accurately classifying gender from photographic data. A dataset comprising student images was collected, preprocessed, and used to train and validate the proposed system. Experimental results demonstrate a high classification accuracy, confirming the model's effectiveness in a real-world educational setting. The system is integrated into a prototype application intended to streamline administrative tasks, such as attendance tracking and dormitory allocation, thereby enhancing operational efficiency and security within the boarding school environment. This research underscores the practical utility of facial analysis technology in specialized management contexts, offering a scalable solution for similar institutions.

Keywords: gender detection, image processing, student management, boarding school