

Abstract

Criminal identification through face recognition technology has gained significant attention in the field of law enforcement and security in recent years. With the advancements in artificial intelligence (AI) and machine learning (ML), facial recognition systems have become a key tool in identifying individuals based on their unique facial features. This paper explores the role of face recognition technology in the identification of criminals, its applications, challenges, and ethical considerations.

The primary objective of this study is to evaluate the effectiveness of face recognition algorithms in accurately identifying suspects, particularly in the context of criminal investigations. By utilizing large databases of known criminal faces and comparing them with captured images from surveillance systems, face recognition systems can provide a rapid and reliable means of identification, potentially preventing further criminal activity and aiding in timely arrests.

However, despite its promise, face recognition technology faces challenges such as issues with accuracy in diverse populations, concerns over privacy, potential misuse, and the risk of false positives or biases in identification. These limitations raise important questions about the balance between public safety and individual rights.

This paper examines the technological frameworks behind face recognition systems, analyzes case studies where the technology has been used for criminal identification, and discusses regulatory frameworks and policies needed to ensure ethical use. In conclusion, while face recognition holds great potential for enhancing criminal identification processes, its integration into law enforcement practices must be approached with caution, ensuring fairness, transparency, and accountability.