

# **A BIOMETRIC FACE RECOGNITION FOR WEB-BASED ATM VERIFICATION SYSTEM**

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**ABSTRACT** - ATMs are essential financial services capable of users access to cash, transfers, and bill payments. The increasing demand for secure and efficient authentication mechanisms in ATM-based systems demands the creation of new technologies to improve user verification. This study aims to construct a biometric face recognition system incorporated into a web-based ATM verification system. The objectives are to identify the features of ATM based system using face recognition, to develop a model for a biometric face recognition for web-based ATM verification system and to evaluate the functionality and usability of the system. Methodology used is the Waterfall model built through the laravel framework, PHP, CSS, and MySQL. The recommended biometric face recognition technology increased consumer security and convenience through a web-based ATM verification system. It reduces the risks of unauthorized access and fraud by eliminating traditional PIN-based and fingerprint authentication. The model was tested using User Acceptance Testing (UAT) involving 20 respondents, and convinced the proposed model contributes the functionality of biometric face recognition and ease of use the website. The outcome of this the model can be used by the user to gain the security level through the face biometric recognition technology.

**Keywords:** ATM, biometric, face recognition, laravel, User Acceptance Testing

## **1. INTRODUCTION**

ATMs are essential financial services that provide users with the ability to check their balance, withdraw cash, or transfer funds. These self-service machines are often installed in various parts of the country and offer various services such as balance transfers, check deposits, and bill payments. Biometric systems, such as fingerprints and iris recognition, are used to identify individuals in various industries (Ghaffar, Allam, Mansour & Alsoud, 2008). In financial services, biometric fingerprints were introduced to withdraw money, but they have higher recognition issues compared to PINs. Face recognition has been introduced (Ovsiannikov, 2022) as a more secure and user-friendly alternative to fingerprints and PINs. Face recognition is faster-unlocking and does not require memorizing codes and passwords, making it more user-friendly. This project proposes a web-based application for an ATM verification system using biometric facial recognition to prevent hacking incidents and incorrect reading of fingerprints. The purpose of introducing face recognition to ATM systems is to improve the security of transactions and make them more popular among the younger generation, who want access to all systems.

## **2. METHODOLOGY**

The Waterfall model was used to build this A Biometric Face Recognition for Web-based ATM Verification System, a sequential linear approach to the System Development Life Cycle (SDLC) (Hoory & Bottorf, 2021). The steps are as follows: initialization, planning, designing, programming, testing, and documentation is the initial step in this project's development. The process begins with a requirements analysis to identify the needs of ATM users in there was a thorough testing phase in which data was collected via surveys and functional testing to ensure that the application met the requirements and operated effectively.

## **3. RESULTS AND DISCUSSION**

During the testing phases, 23 respondents completed the questionnaire, and their responses were collected and analyzed. While based on the evaluation testing through User Acceptance Test (UAT), about 69.6% of the respondents prefer the convenience of a web-based system with biometric face recognition. Next, 21.7 % were open to the web-based system but had concerns, and 8.7 % of respondents needed more information to decide whether to allow the user to access their system bank account from any internet-connected device. 4.3 % did not agree with developing A

Biometric Face Recognition for Web Based ATM Verification System. However, 95.75% with the development of this research.

#### **4. NOVELTY OF RESEARCH / PRODUCT**

This research introduces a novel approach by integrating biometric face recognition technology into a web-based ATM verification system. Utilizing the Laravel framework adds to the novelty, providing a robust and flexible platform for development. Comprehensive evaluation and testing ensure the system's performance and reliability in real-world scenarios. The enhanced security and convenience biometric face recognition offers in ATM transactions significantly contribute to the banking sector. This research presents an innovative solution that improves user verification, reduces fraud, and fosters a safer banking environment.

#### **5. CONCLUSION**

To conclude, this study developed a secure and convenient biometric face recognition system for web-based ATM verification. Overall, this research offers a novel solution that improves user verification, reduces fraud, and fosters a safer banking environment.

#### **REFERENCES**

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