

**SCHOOL OF COMPUTER SCIENCE AND APPLICATIONS**

A Project Report

on

**Multiple Authentication System in the ATM Using Machine Learning**

Submitted in Partial fulfillment of the requirements for the award of the Degree of

Master of Computer Applications

Submitted by

**Prince Kumar**

**R21DE179**

Under the guidance of

Internal Guide External Guide

Prof. Nagaraju S. Mr. Abhinav Kumar Abhay

School of CSA Software Developer, Technical Lead Trainer

Reva University, Bangalore K-AKA Technology Services

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Rukmini Knowledge Park, Kattigenahalli, Yelahanka, Bengaluru-560064

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# CERTIFICATE

Certified that the project work entitled **“Multiple Authentication System in the ATM Using Machine Learning”** carried out under our guidance by **Prince Kumar, R21DE179,** a bonafide student of REVA University during the academic year **2022-23,** is submitting the project report in partial fulfillment for the award of **Master of Computer Applications** during the academic year **2022-23.** The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

**Signature with date Signature with date Signature with date**

**Dr. M Vinayaka Murthy**

**Program Co-ordinator**

**Prof. Nagaraju S.**

**Internal Guide**

**Mr. Abhinav Kumar Abhay**

**External Guide**

**Signature with date**

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**Dr. S. Senthil**

**Director**

**External Examiner**

**Name of the Examiner with** **affiliation** **Signature with Date**

**1.**

**2.**

**Company Certificate**

**DECLARATION**

I, **Mr. Prince Kumar, R21DE179** student of Master of Computer Applications belong into School of Computer Science and Applications, REVA University, declare that this Project work entitled “Multiple Authentication System in the ATM using Machine Learning” is the result of the Project work done by me under the supervision of **Prof. Nagaraju S.** and **Mr. Abhinav Kumar Abhay** Software Developer, Technical Lead Trainer, at School of CSA Department, Reva University and K-AKA Technology Services.

I am submitting this Project work in partial fulfillment of the requirements for the award of the degree of Master of Computer Applications by the REVA University, Bangalore during the academic year 2022-23.

I further declare that this Project report or any part of it has not been submitted for the award of any other Degree / Diploma of this University or any other University / Institution.

*(Signature of the candidate)*

*Signed by me on :* DD/MM/YYYY

*Certified that this project work submitted by Prince Kumar has been carried out under our guidance and the declaration made by the candidate is true to the best of my knowledge.*

*Signature of Internal Guide Signature of External Guide*

*Date : ----------------------- Date : -------------------------*

*Signature of Director of School*

*Date : ----------------------------*

*Official Seal of the School*

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**ABSTRACT**

Machine learning-based multiple authentication systems in ATMs provide a considerable improvement in banking security. Banks may improve the security of their ATMs, preserve consumer transactions, and increase confidence in the financial system by utilizing machine learning algorithms. Automated teller machines (ATMs) must now incorporate a variety of authentication techniques. Application-based authentication criteria like: Less than one active user, Take a picture, check the profile, then check the person's heart rate before checking the pin confirmation. A growing variety of benefits that ATM users can take advantage of have helped automated teller machines (ATM) acquire popularity in the banking industry. Without needing to visit the bank, ATM customers can withdraw cash, deposit cash, credit cash, see balances, inquire about transactions, send payments, and send bills. The overall goal is to integrate a camera as hardware inside ATM machines to verify the correct user and potential threat to the public. Additionally, the quantity of users that actively utilize the camera to take pictures, identify faces in them, and gauge human heart rates before confirming the OTP validation. An automated teller machine (ATM) is a mechatronics-based telecommunications device that allows customers of financial institutions to carry out financial transactions, like cash withdrawals, deposits, balance inquiries, or account information inquiries, whenever they want, especially late at night, and without having to interact directly with bank employees. For the execution of a high-security interchange transaction, there are three PIN processes. At the entry terminal, the given PIN is encrypted; for this process, a private cryptographic key is employed. The encrypted PIN is sent to the acquirer's system along with other transaction components. Then, a hardware security module receives the encrypted PIN via a route from the acquirer's system. It decrypts the PIN there. The decrypted key is immediately re-encrypted when a cryptographic key is used for interchange, and it is then sent through regular communication channels to the issuer's system. The routed PIN is then validated using the methods for online local PIN validation after being decrypted in the issuer's security module.