**Application for patent filing**

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| **Date** | **D** | **D** | **M** | **M** | **Y** | **Y** | **Y** | **Y** |
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| Name of the Faculty | : | **SAFA .M** |
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| Contact no. of all Inventors |  | 9952783715 |
| Major area of invention | : | CNN |
| Narrow focus area of invention | : |  |
| **Title of the invention** |  | Secure OTP-generated hand gesture online transaction using CNN |
| Earlier status of research | : | The early security system can be manipulated by fraudsters. But this system is completely secure and safe for online transactions.  Some people were finding difficulty in reading OTPs and entering it for online transactions. Now, the transaction can be completed with ease. |
| How different your invention from similar research / others - **Novelty**? | : | Live facial gestures for easy and safe online transactions instead of OTP’s and passwords.  Face is recognized from the live video through the image processing technique  The entire transaction can also be completely automated for greater productivity and decreased friction, helping to enhance the customer experience. |
| Possible domain for field application | : |  |
| Possible sector for commercialization | : |  |
| Faculty Signature with date | : |  |
| HoD Remarks / Recommendation for filing patent | : |  |
| Application received by  The Review committee on | : |  |
| Review committee remarks | : |  |

**Invention Disclosure Form**

**To be filled by the inventors**

Please provide highly relevant information for details asked below and use consistent language while describing the specific feature or element in the invention disclosure.

|  |  |
| --- | --- |
| 1. | **Title of invention**  Secure OTP-generated hand gesture online transaction using CNN |
| 2. | **Describe the invention**.   * Live facial gestures for easy and safe online transactions instead of OTP’s and passwords. * Face is recognized from the live video through the image processing technique * The entire transaction can also be completely automated for greater productivity and decreased friction, helping to enhance the customer experience. |
| 3. | Does the invention provide a **new use of or improvement to an existing product or process**?   * Live facial recognition will make online transactions more secure and easy to use. * Live facial recognition can enable illiterate people to use online transactions with ease and there is no need for them to know the procedure to enter the password/OTPs. * Passwords created can easily be hacked by programmers whereas facial recognitions can’t be decoded. * No more forgotten password problems as there is no need of remembering the password. |
| 4. | State the **Novelty** of the invention and specify the claims in the invention   * The whole idea of using face detection to secure online transactions is claimed to be novel. |
| 5. | Describe the **advantages of the present invention over the existing technologies**   * Easy to use * Safe method for online transaction |
| 6. | Describe how the **present invention overcomes the drawbacks** of currently available technology related to your invention.   * The early security system can be manipulated by fraudsters. But this system is completely secure and safe for online transactions. * Some people were finding difficulty in reading OTPs and entering it for online transactions. Now, the transaction can be completed with ease. |
| 7. | Describe **uses, applications and benefits** of the invention.   * Prevent online fraudsters from OTP theft. * Easy and safe to use * Can be applied to any online transactions * The benefits provide higher security standards than other security tools for payments via biometric identity verification. |
| 8. | Does the focus of the invention results in **societal impact technology**? (Please describe how in detail, also specify the commercial applications, the market need of product/ service of invention and why?)   * These days more time and money are being invested to prevent fraudulent activities from happening during transactions. So, by implementing this, hacking can be prevented. |
| 9. | Characterize the **disadvantages and limitations** of the invention   * To increase the data set for large amounts of data to store, secure, track and handle. Also, as the image size and its quality continue to progress, face recognition has a long way to go in the coming years. * In order to ensure that people know how they must pose for screening purposes, the detection angle is essential. |
| 10. | Enclose the **sketches, drawings, photographs** and other materials that help in better understating/ illustration of the novelty in the invention. |
| 11  . | **Current development status of the invention**   1. Has your invention been tested experimentally. Yes     **Fig .1 Architecture Diagram**    **Fig .2 Block diagram**  C:\Users\USER\Downloads\a (3).jpg  **Fig .3 Use Case diagram**    **Fig .4 Activity Diagram**    **Fig .5 Sequence diagram**  **C:\Users\USER\Downloads\WhatsApp Image 2021-05-04 at 1.04.53 PM.jpeg**  **Fig 1 Loss and accuracy of train and test set**     |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Actual value** | **Predicted value** | | | | | | | | 0 | 0 | 1 | 2 | 3 | 4 | 5 | | 1 | 0.0031 | 0 | 0 | 0 | 0 | | 1 | 0.001 | 1 | 0.0021 | 0.00034 | 0 | 0 | | 2 | 0.00068 | 0.0021 | 0.99 | 0.0034 | 0 | 0 | | 3 | 0 | 0 | 0.00034 | 1 | 0 | 0 | | 4 | 0 | 0 | 0.00034 | 0.022 | 0.97 | 0.0034 | | 5 | 0 | 0 | 0 | 0 | 0.0062 | 0.99 |   **Table 1 Prediction Vs actual value of confusion matrix**     1. adopted in the experiment. 2. Are the experimental data is documented in a formal log or any instrumental confirmation available for the invention (kindly provide the details) 3. Is further development of your invention is necessary or development of the invention is in progress (provide the relevant information) |
| 12. | **Please list any of your publications** (including abstracts, posters, news releases, etc.) to emphasize the present invention background. |

13. **INVENTOR(S) AND/OR CONTRIBUTOR(S):**

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**14. ASSIGNMENT DETAILS: Assignee is the entity or individual who holds the patent.**

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| Signature: (To be signed by the authorized signatory on behalf of the assignee) |  |
| Name of the Authorized Signatory and Designation |  |
| Address: |  |
| City and State: |  |
| Citizenship  (Country): |  |