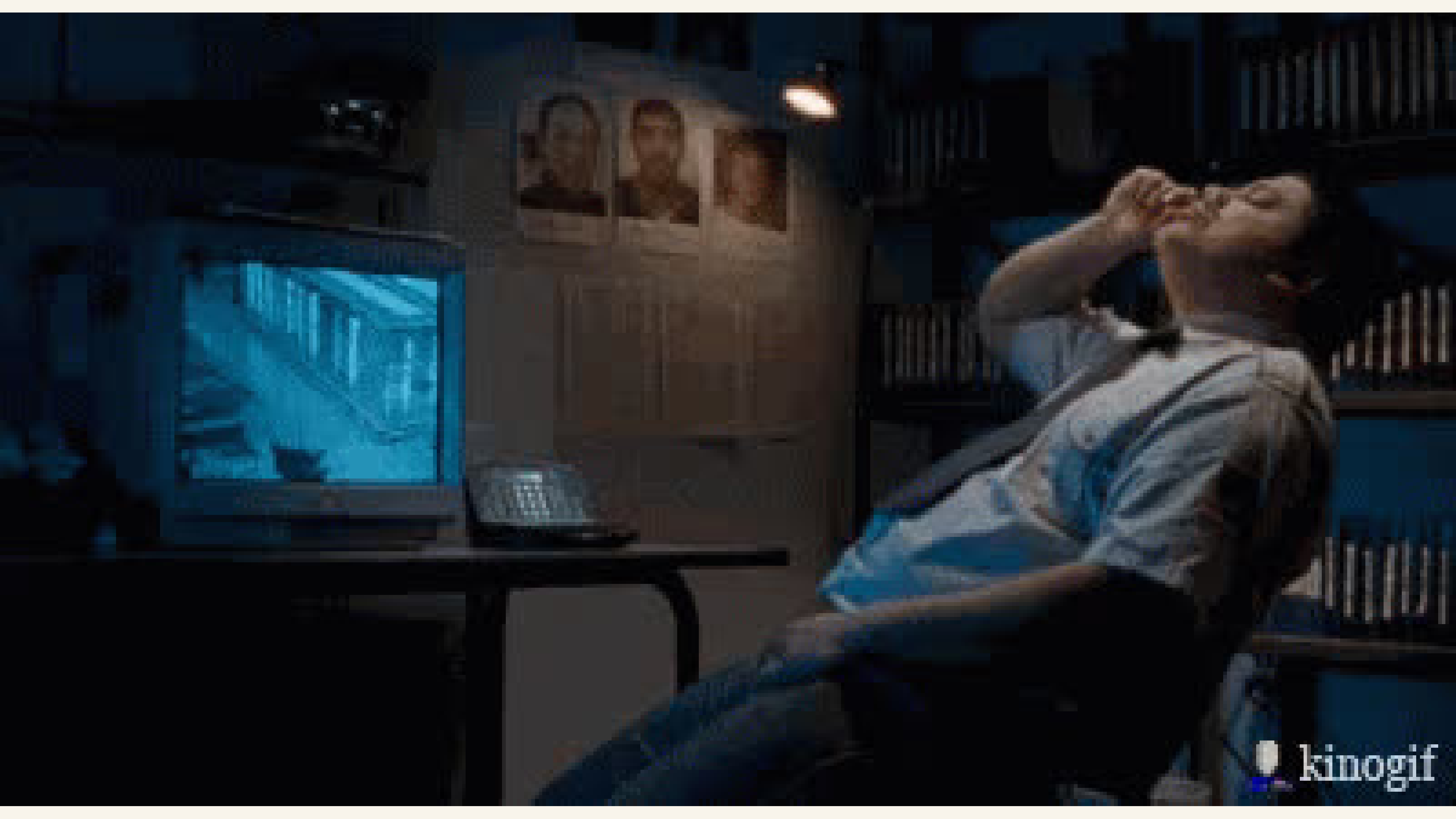


Smart Surveillance Solutions

Submitted by

Simarjot Singh





Over 70% people respond to security guards not being attentive!

Think India Journal, Vol-22-Issue-33-
December-2019.

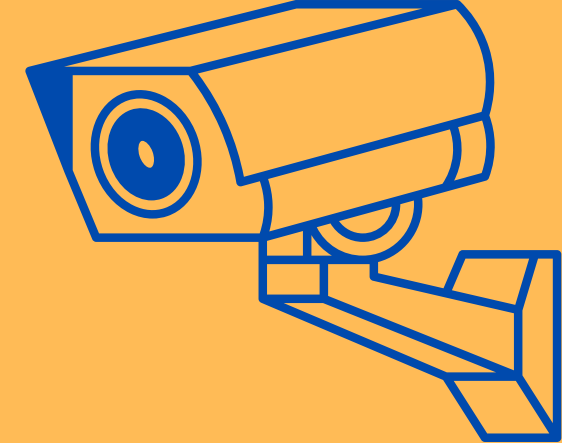
Surveillance Industry is 40 Billion\$ +
Industry . Most Bodyguards, Private
Investigators, Security Guards are
subject to human error





Introducing **Smart CCTV monitoring**





WHAT IT DOES?

The program feeds the surveillance camera footage and distinguishes normal human actions like walking, running to abnormal actions like fighting. In case of an abnormal action, it can trigger an alarm, report to police services, and/or call emergency health services, eliminating the need for security personell to keep watching boring surveillance videos all the time.





INTRICACIES:

Confidence Level: 98%

The program runs on Long-Term Recurrent Convolutional Network which proves to be way more efficient than Regression CNN and 3D CNN.

Real-Time Capabilities

With high graphical power the program can run in real-time completely eliminating the need for surveillance monitoring staff.



Technical Details

The project utilizes LRCN model with 4 CNN layers followed by a LSTM layer with an early stopping callback. The feature extraction process is fully automated. From the image pixels, CNN learns visual patterns directly. The entire process occurs in three steps:

- 1) Data processing
- 2) Training the model
- 3) Inference

To replicate:

16Gb DDR5/DDR4 RAM
i7/Ryzen 5 8 or 16 core processors
4GB VRAM and a Dedicated Graphics
Card for
real-time capabilities.



Applications

DRONE SURVEILLANCE

In High-Risk areas, the program can be tuned to detect possible bomb plantings to armed threats.

SHOPPING BEHAVIOR ANALYSIS

Can be used by large outlet malls to analyze customer movement and action/pose while shopping

SURVEILLANCE MONITORING

Can be used to monitor CCTV to detect any suspicious human activity like fighting, stealing, vandalism on school/college campuses, etc

Future Roadmap

1

**Expanding
Dataset from
multiple sources**

2

**Enabling Low
Latency GPU
Performance**

3

**Hypertuning
Data**

4

**Adding several
CNN layers to
improve model
accuracy**

LINKS

<https://github.com/simar5244/Hackdemonium-2022-Submission>

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**Let's
Contribute to a
safer, more
secure, and
peaceful world**

