DRUGEX : THE DRUG EXTINCTOR APP

D THAMIZHSELVI
Dept. Of Information Technology
Sri Sairam Engineering College
India , Chennai
thamizhselvi.it@sairam.edu.in

MOHAMMED INAMUL HASSAN M
Dept. Of Information Technology
Sri Sairam Engineering College
India , Chennai
sec20it022@sairamtap.edu.in

R VISHAL AMRITH
Dept. Of Information Technology
Sri Sairam Engineering College
India , Chennai
sec20it110@sairamtap.edu.in

R AVUDAINAYAKI
Associate Professor
Sri Sairam Institute Of Technology
India , Chennai
avuramesh2004@gmail.com

2023 Intelligent Computing and Control for Engineering and Business Systems (ICCEBS) | 979-8-3503-9458-0/23/$31.00 ©2023 IEEE | DOI: 10.1109/ICCEBS58601.2023.10449288

ABSTRACT : ***The development of an app which can be used to anonymously report a drug trafficking incident in a region. If a DrugEx App user spots a person who is using drugs or is trafficking drugs he/she can report the information anonymously and safely to the higher officials and this evident information can be used as solid proof to provide justice and help them recover their drug addiction. The user can send all the necessary information he/she has witnessed about the person trafficking drugs with additional proofs which could contain audio, video of that incident. Metadata makes finding and working with data easier - allowing the user to sort or locate specific documents. We use Metadata present in the given photo or video and find the exact location the incident has occurred and report it instantly to higher officials so they could conclude if the information is legitimate and take necessary actions. By this we can stop a lot of Drug Trafficking and many teenagers who are addicted to drugs. One of the critical benefits of the app is its potential to aid in the recovery of drug-addicted individuals. By intervening early and providing the necessary support and resources, authorities can offer rehabilitation and treatment to those in need. This proactive approach addresses the root causes of drug addiction and helps to break the cycle of substance abuse, particularly among teenagers who are vulnerable to these harmful influences.The far-reaching impact of the DrugEx App cannot be overstated. By curbing drug trafficking, the application helps prevent the proliferation of drugs in our communities, safeguarding the well-being of our citizens. Furthermore, by providing concrete evidence, it enables law enforcement agencies to build strong cases against drug traffickers, leading to their apprehension and subsequent dismantling of criminal networks.***

INTRODUCTION

In India, the issue of substance abuse has taken on alarming dimensions. Cannabis, heroin, opium, and methamphetamine have become distressingly common drugs of choice, and their impact on society cannot be overstated. The situation is further complicated by a surge in injecting drug users, raising concerns about the spread of blood-borne diseases and the need for urgent intervention.

The discrepancy between official and unofficial estimates of heroin users in India is a stark reminder of the complexities involved in tracking and addressing drug abuse. While the UN report suggests one million registered heroin users, the unofficial figures paint a much bleaker picture, indicating that the true number may be closer to 5 million. This disparity underscores the urgency of comprehensive and accurate data collection and analysis.

One of the most disconcerting trends is the increasing prevalence of drug use among teenagers, particularly

979-8-3503-9458-0/23/$31.00 ©2023 IEEE

those aged 16 to 19. These formative years are a crucial period for cognitive development, making it imperative to safeguard the well-being of this vulnerable demographic. Drug abuse during adolescence can impair memory, hinder decision-making abilities, and have a lasting impact on an individual's growth and development.

The consequences of drug addiction are not limited to neurological impairments. They extend into the social sphere, causing significant problems in relationships. As individuals grapple with addiction, maintaining healthy connections with family and friends becomes increasingly challenging. This not only isolates the individual but also places immense strain on their support network.
The proposed DrugEX App presents a glimmer of hope in this complex landscape. This innovative solution takes a multifaceted approach to tackling the drug abuse problem:

Anonymous Reporting: By offering a safe and anonymous platform for individuals to report drug-related incidents, the DrugEX App encourages greater transparency and information sharing. This can empower communities to take action collectively.

Precise Location Tracking: Leveraging metadata to pinpoint the exact locations of drug-related activities, the app assists law enforcement agencies in targeting problem areas effectively. This data-driven approach can aid in resource allocation and strategic planning.

Community Empowerment: Beyond its law enforcement applications, the DrugEX App can foster a sense of community involvement. It enables citizens to take an active role in addressing the drug problem by reporting incidents and helping authorities identify and combat drug-related issues.

As India grapples with the complex challenge of drug abuse, initiatives like the DrugEX App represent a crucial step toward understanding the extent of the issue, providing support to those affected, and ultimately working together to build a healthier and more resilient society.

I. LITERATURE SURVEY

[1] An examination of racism and displacement in the drug trade in Mexico's northern Tarahumara area Don Juan Okoab - In the Tarahumara area, drug trafficking is racialized and embedded in a larger pattern of colonial brutality. Rather than relying on their capacity to imitate the state, traffickers exercise a kind of mestizo sovereignty based on the coloniality inherent in mestizaje.

[2] Authors Nicholas Dorn, Michael Levi, and Leslie King, "Upper Level Drug Trafficking" A closer look at the data reveals that the most sophisticated drug marketplaces facilitate communication and trade among politico-military traffickers, commercial crooks, and adventurers.

[3] Building on these prior studies, which used various big data and machine learning approaches to detect substance abuse behavior and illegal drug selling on social media, A Machine Learning Approach for the Detection and Characterization of Illicit Drug Dealers on Instagram: Model Evaluation Study by Atsushi Nara, Joshua Kim, Naoaki Okazaki, Newton Miyoshi, Zhengxing Huang, and Juliana T Pollettini.

[4] Using a Multi-Modal Deep Learning-Based Fusion Approach, Anamika In this work by Paul Rupa and Aryya Gangopadhyay, we offer a multi-modal fusion based deep learning approach with enhanced performance for identifying online drug transactions. We have also developed a drug category identification algorithm that can identify 242 distinct substances just by looking at a picture. Images of drugs and drug-related hashtags are common forms of online communication amongst sellers. In addition, they give out their personal details such a Whatsapp number, phone number, email address, and web address.

[5] Md. Rafiqul Islam, Shaowu Liu, Xianzhi Wang, and Guandong Xu - Deep learning for disinformation detection on online social networks: a survey and fresh perspectives. Researchers in academia and business have utilized DL to a wide range of decision-making applications in order to address a variety of challenging MID issues (Xu et al. 2019; Yenala et al. 2018; Yin et al. 2020). As a result, the

goal of this study is to give just such a comprehensive overview of recent work on MID using DL methods.

[6] Chuanbo Hu, Minglei Yin, Bin Liu, Xin Li, and Yanfang Ye - Detection of Illicit Drug Trafficking Events on Instagram: A Deep Multimodal Multi Label Learning Approach. We train a model to predict numerous labels for illegal substances using a combination of textual and visual data. By concurrently refining pretrained text and picture encoders, we have constructed a self-supervised multimodal bidirectional transformer, inspired by BERT's success.

[7] This article by Marc Parrilla, Amorn Slosse, and Robin Van Echelpoel discusses the use of a portable electrochemical device for the fast on-site detection of illegal narcotics in smuggled samples. As it is, we have to depend on inferential color tests and portable spectroscopic techniques.

[8] Drug trafficking hashtags on Instagram: a fine-grained categorization system by Chuanbo Hua Bin, Liub Yanfang, and Yec Xin Lia - In recent years, social media have emerged as significant marketplaces for the distribution of narcotics. The increased accessibility of drug trafficking enabled by hashtags only serves to heighten the dangers of substance dependence. However, there are major obstacles to identifying and controlling drug trafficking. In addition, the speedy legalization of certain drugs has necessitated a nuanced categorization of substances to differentiate between those that are legal and those that are not.

[9] To what extent, in what ways, and with what consequences does poly-drug trafficking at the Australian border operate? by Caitlin Members of the Research Team: Jenny Chalmers, Elizabeth Hughes, David Anthony Bright, Michael McFadden - Two distinct approaches were used. To begin, we analyzed data from 1999 to 2012 collected by the Australian Federal Police (AFP) on all commercial level seizures at the Australian border. Two, we compared the profiles by using unit-record data on a sample of 20 drug trafficking cases and linked-cases (defined as the initial drug trafficking case and any additional criminal cases that are related by common offenders and/or suspects).

II. EXISTING SYSTEM

The STOP APP, a subsystem of our Drug Ex app built for us by 5 Stones and released in 2016, is the first of its kind to allow individuals from any location in the globe to anonymously and securely report cases of human trafficking. Every piece of data entered into the STOP APP is sent immediately to STOP THE TRAFFIK's encrypted database, where it is compared to other sources of information on human trafficking and contemporary slavery. By analyzing this information, experts may get deeper knowledge of human trafficking on a worldwide scale. Insights are compiled into visually appealing and informative reports that are sent to relevant authorities, organizations, communities, and people to facilitate an educated and focused response to prevent and fight human trafficking.

III. PROPOSED SYSTEM

Our aim of the application is, it would have all the facilities that are provided by the existing system and few new features which would be helpful to report and help stopping drug trafficking. We have used React Native, a Software Framework, to build the app and there are modules in which the app works. The first time the user opens the application, it asks for several guidelines to be read and checked through after that the user can use the application and report drug findings easily and securely.

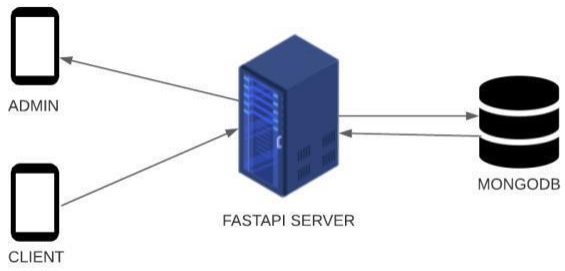

Fig : Simple Architecture

The working of the app starts from the user clicking the

image and entering the required information displayed

in the report module. The app asks for the user to enter all mandatory fields and if not entered, the user can't submit their report. After clicking the image/ video of the incident, the application extracts the metadata of the image , this data is called the Exif data.

Exif data :-

To see the exif data that is encoded in JPEG images from digital cameras, you may use a program called Exif Data Viewer. Photos taken with a digital camera include meta data called "exif" or "exchangeable image file format" encoded in the files. Typical metadata tags contain the current time and date as well as the camera's default settings. Manufacturer, model, ISO, metering mode, focal length, aperture, and shutter speed are all examples of camera parameters that are often recorded.

The submit section of the DrugEx app was developed to let users easily and completely submit their discoveries to the appropriate authorities. When a user encounters an issue and hits the "Report" button on the homepage, they are sent to the Report page where they may provide details about the incident. This guarantees that every nuance is recorded precisely and may be put to good use by law enforcement.Fields on the Report page ask for crucial information and guide the user through filling it in. Some examples of these categories include "Description," "Date," "Trafficking Type," "Address," "Gender," "Age," "Appearance," "Other Information," and so on.

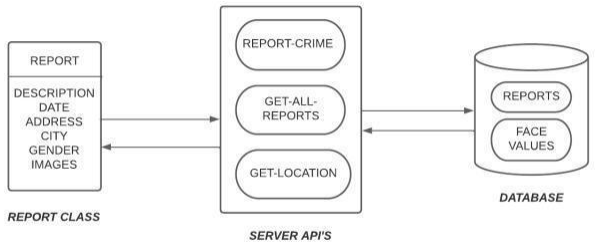

Fig : Report Class in Database

The information that has been entered in the report module, is now passed to the database. We use MongoDB to store all our information that has been entered by the user. Contents including description, date, trafficking type are stored. All the images took at the site of the incident are stored in the firebase for further extraction of coordinates to find the location. We have three different storage options in the database, which are report details, face value and chat. Every single person has unique face value details , this is stored for each and every image, and the report details which are entered in the report module are stored in the database.The chats which are done with the official is also stored in the database which helps in easy access to the older chats which are done previously by the user.

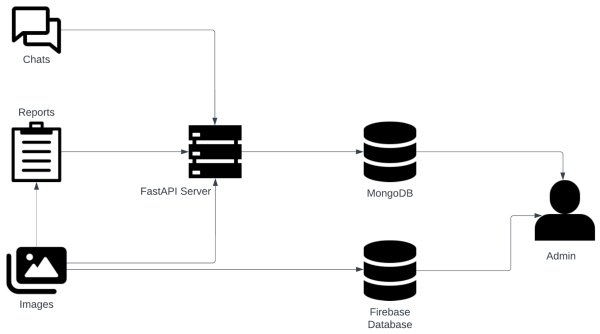

Fig : Overall Architecture

As we have extracted the image coordinates in the previous module, this module is used for face detection. We capture the face value for each person in the given image and store it in our database. After storing the image's face value, we use it to check if there have been previous occurrences to the similar person using the face value match. If found it displays the details of the previous records and incidents of the person from our database.

The admin app, which would be used by the officials. It shows all the reports which are done through the client app. The reports consist of all the details including the location from which the image was captured. Total reports will be displayed on the top section above the cards. With every refresh from the admin user, the reports will be updated. Each report has an unique report id, which is mapped to victims. Whenever there are multiple reports about the same person, the report ids of those reports are grouped together. Each report contains all the information the user reported through the client app.

The anonymous chat module revolutionizes how individuals interact with police officials, prioritizing confidentiality, security, and convenience. It enables users to communicate without revealing their identities. Each user is assigned a unique ID for complete anonymity and easy retrieval of previous messages. Trust and reliability are fostered through the ID-based system, allowing discussions on sensitive matters and incident reporting. The app maintains continuity by keeping users connected to the same official. It streamlines communication, eliminating traditional reporting methods and empowering users to report crimes or seek advice conveniently. In conclusion, this innovative app offers a secure and user-friendly platform, ensuring confidential, simple, and efficient communication with higher officials.

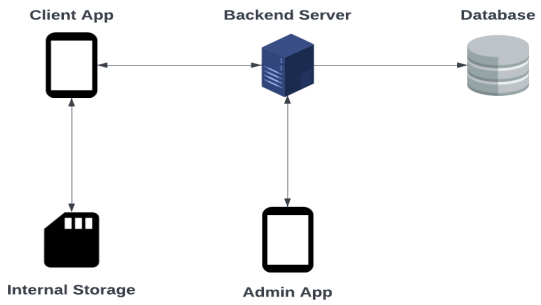

Fig : Chat Architecture

Face detection module is also implemented in the DrugEX app, Each face consists of a face data and we assign each face to an unique Face Id. If the system encounters a similar face again and the face data matches the previous report face data, the report is assigned back to the similar id. The app lists the same person who is being reported many times under a single Id below, so we can also check the history of reports done by that specific person. In addition to its core features, the DrugEX app incorporates an advanced face detection module that enhances its functionality and user experience. This module not only identifies and records faces but also intelligently manages the data to improve the efficiency of reporting and tracking. The DrugEX app takes reporting a step further by offering users the ability to access a comprehensive history of reports associated with a specific person. This means that if the same individual is reported multiple times, all those reports are conveniently listed under a single, unique Face ID. This history tracking feature provides valuable insights for law enforcement and community organizations, enabling them to monitor repeat offenders and patterns of drug-related incidents more effectively.

IV. FUTURE SCOPE & TARGET MARKET

We have lots of ideas in expanding our project , some of it could be,
To embed a human trafficking report mechanism in the application. By doing this we can also eradicate the problems related to human trafficking , because human trafficking is also a big ongoing issue which is increasing every day and we need to put an end to this problem.

Connect the app with a smart watch and make it as an safety monitoring application for women and children. If there is an emergency it can take readings of heart beat , bp and by the use of morse code can be activated in the app and could send instant messages to the nearest emergency locations and government places. If there is an alert detected it can turn on its audio and video and start recording whatever happens at the moment which could be later used for better justice.

Connecting with Rehabs and suicide help centers and imbedding it in the app, so even help could be providing in overcoming the drug problem.

Expanding the DrugEX project with these forward-thinking ideas showcases a steadfast commitment to tackling a range of societal challenges. The envisioned additions include creating community support groups for those battling substance abuse, providing educational resources on drug prevention and recovery, integrating crisis helplines, offering real-time anonymous chat support, and enhancing geolocation-based services for easier access to local rehabilitation and counseling centers. Collaborating with law enforcement agencies to streamline investigations and developing AI-powered risk assessment tools adds a layer of effectiveness to the app. Multilingual support, public awareness campaigns, and integration with emergency services make it more accessible and impactful. Robust data analytics and a continued focus on user anonymity round out a

comprehensive approach that not only combats drug-related issues but also promotes community well-being and safety.

V. RESULTS & DISCUSSIONS

We have seen an exponential growth in the number of drug using teenagers and lots of drug trafficking in day to day life and this reduces the amount of trafficking happening in day to basis as even a stranger using this app can easily report the incident to the higher official with essential proofs such as audio/ video and essential details needed of the particular situation. As we are able to report the incident anonymously, it reduces lots of risks for the user. It also helps in dealing with the fear of coming out and reporting and also provides justice more easily as we have the proof of the incident including the location and pictorial data. So we consider that this app is an essential in day to day lives which solves lots of problems related to drug trafficking and provides a ton of advantage to the government in providing justice in a faster and an easier way. We conclude that if every other person has this app in their phones we can eradicate and make drug trafficking numbers to an all time low.

VI. REFERENCES

[1] Drug Trafficking Reports https://unodc.org/unodc/en/data-and-analysis/wdr2021.html

[2] Drug trafficking in the Tarahumara region, northern Mexico: An analysis of racism and dispossession [Fatima del Rocio,Valdivia Juan Okowíb]

[3] Android Vector Drawables Overview https://developer.android.com/guide/topics/graphics/vector-drawable-resources

[4] Adverse Drug Reaction Reports Received Through the Mobile App : A Comparison with Classical Methods of Reporting [Adverse Drug Reaction Reports Received Through the Mobile App: A Comparison with Classical Methods of Reporting].

[5] Exif viewer - http://exif-viewer.com/

[6] FireBase Meta Library https://firebase.google.com/docs/storage/android/file-metadata

[7] GPS Coordinates to Latitude Longitude Converter https://www.gps-coordinates.net/gps-coordinates-converter/

[8] Image Extractors https://medium.com/@NullByteWht/how-to-obtain-valuable-data-from-images-using-exif-extractors-77feee50531

[9] FireBase dependencies https://firebase.google.com/docs/android/android-play-services

[10] Project Metadata https://documentation.catworkx.com/pmd/latest

[11] Metadata specifications https://packaging.python.org/en/latest/specifications/declaring-project-metada ta/

[12] Authentication https://www.javatpoint.com/android-firebase-authentication-google-login