Synopsis

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| Title: Image formation from sketches of crime suspects and retrieval of data of the same. | | |
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**Introduction**

In law enforcement and criminal cases, automatic retrieval of photos of suspects from the police mug shot database can enable the authorities to rapidly narrow down potential suspects. In practice, photos of suspects are usually hard to acquire and it is known that commercial software or experienced artists are sought to generate sketches of a suspect based on the description of eyewitness. Thus, sketch to photo synthesis and matching are important.

**Existing System**

A facial composite is a graphical representation of one or more eyewitnesses' memory of a face, as recorded by a composite artist. Facial composites are used mainly by police in their investigation of (usually serious) crimes. These images are used to reconstruct the suspect's face in hope of identifying them. Using this image, their criminal record is searched for further details.

**Proposed System**

The proposed model aims to generate realistic images from hand-drawn sketches of the suspects using GANs(Generative Adversarial Network) which is then run against the criminal database for a match. Personal details and past criminal records of the suspect are displayed if a match exists.

**Relational database Structure**

A relational database is maintained to store personal details of the criminals.

**NOSQL Database Structure**

NoSQL database consists of Criminal records of the suspect, if any. This was chosen as one suspect can have any number of criminal records and of any type.

**RDBMS and NOSQL Integration**

When the image is formed, the image is matched with the one in the RDBMS and if and when found, his criminal records are searched in the NoSQL database.

**Software Tools used**

MongoDB- NOSQL based database to store images

Oracle MySQL- RDBMS

Anaconda-Deep learning model (GANs)

**Societal Concern**

Construction of the composite was originally performed by a trained artist, through drawing, sketching, or painting, in consultation with a witness or crime victim. Subsequently, techniques were devised for use by those less artistically skilled, employing interchangeable templates of separate facial features.

The proposed system aids the law enforcement agencies to speed the process of identification of suspects and accuracy as they no longer rely on hand-drawn sketches.