Assignment no.1

Software engineering v20

Submitted by:

Nimra Maqbool (f2023266852)

Khuzaima Tajammal (f2023266890)

Noor Ul Huda (f2023266853)

Proposal for an AI-Powered System for Tracking Missing People

Introduction:

The issue of missing persons is a critical and growing concern worldwide. Traditional methods for locating missing individuals are often time-intensive and resource-heavy, with limited success rates. This proposal outlines the development of an AI-powered system that leverages cutting-edge technologies to improve the efficiency, accuracy, and speed of tracking and locating missing people.

Objective :

To develop a comprehensive AI-based system that:

1. Analyzes data from various sources to generate actionable insights.

2. Identifies patterns and trends to assist in locating missing individuals.

3. Provides real-time monitoring and predictive capabilities to aid authorities and organizations.

Proposed Solution :

Our AI-powered system will integrate the following components:

1. Facial Recognition Technology

- Utilizes AI algorithms to compare images of missing individuals against vast databases (e.g., social media, surveillance footage, and public records).
- Supports dynamic and real-time analysis.

2. Natural Language Processing (NLP)

- Extracts and interprets information from textual data such as social media posts, police reports, and news articles.
- Identifies mentions of missing individuals, unusual activity, or locations of interest.

3. Geospatial Analysis

- Leverages geolocation data from mobile devices, social media check-ins, and surveillance systems.
- Maps potential last-seen locations and predicts movement patterns.

4. Machine Learning Predictive Models

- Analyzes historical data to identify trends and probable outcomes.

- Prioritizes search areas and optimizes resource allocation.

5. Crowdsourcing Platform

- Encourages public participation by allowing users to submit tips, sightings, or relevant information.
- Ensures data integrity and anonymity through secure reporting mechanisms.

Stakeholders :

1. Law Enforcement Agencies

- Police departments and investigative units responsible for missing persons cases.

2. Non-Governmental Organizations (NGOs)

- Organizations dedicated to assisting in searches and supporting affected families.

3. Technology Partners

- Companies specializing in AI, machine learning, and data security.

4. Government Entities

- Policy makers and agencies funding and regulating such initiatives.

5. Community Members

- Individuals contributing tips, participating in searches, and raising awareness.

6. Academia

- Research institutions supporting innovation and providing expertise in AI and ethics.

7. Media Outlets

- Platforms to disseminate information about missing individuals and the system's effectiveness.

8. Funding Bodies

- Public and private investors providing financial resources for development and scaling.

Benefits :

- **Improved Search Efficiency:** Reduces the time required to locate missing individuals by automating data analysis and prioritizing leads.
- **Enhanced Collaboration:** Fosters better coordination among law enforcement, non-governmental organizations (NGOs), and the public.

- **Data-Driven Insights:** Provides actionable intelligence for both ongoing and preventive measures.
- **Scalability:** Can be adapted to serve diverse regions and demographics.

Implementation Plan :

Phase 1: Research and Development (0-6 months)

- Conduct feasibility studies and stakeholder consultations.
- Develop and test initial prototypes for core components.

Phase 2: Pilot Testing (6-12 months)

- Deploy the system in select regions to evaluate real-world performance.
- Collect user feedback and refine algorithms.

Phase 3: Full-Scale Deployment (12-24 months)

- Launch the system nationwide or globally.
- Establish partnerships with law enforcement agencies and NGOs.

Required Resources :

1. Technical Team: AI engineers, data scientists, and software developers.

2. Data Sources: Access to databases, surveillance systems, and public records.

3. Funding: Estimated budget of $[Insert Amount] for development, deployment, and maintenance.

4. Partnerships: Collaboration with law enforcement, NGOs, and tech companies.

Risks and Mitigation Strategies :

1. Privacy Concerns:

- Implement strict data protection measures and comply with legal regulations.
- Ensure transparency and public awareness of the system's purpose and operations.

2. Technical Challenges:

- Conduct rigorous testing to ensure reliability and accuracy.
- Maintain a dedicated support team for ongoing maintenance and upgrades.

3. Adoption Resistance:

- Provide training and resources to stakeholders.
- Highlight success stories and demonstrate the system's impact.

Conclusion :

By leveraging artificial intelligence, this system represents a transformative step in addressing the global challenge of missing persons. With stakeholder support and collaboration, we can build a solution that saves lives, reunites families, and brings hope to communities.