Idea-1: AR School Book

Brief Description:

Target a particular class (bangla medium, class 7), a particular book (science book) and provide marker based Augmented Reality interactive app based on the **figures** and **experiments** included in the book.

Features:

(1) Each figure and experiment included in the book will be used as a marker. Pointing the camera at these markers will start the AR view/interaction.

(2) AR experiences will be of two types,

(2.1) Biology figures-

a sizable 3D model of the figure will appear on screen and the user can touch different parts from the figure to highlight.

(2.2) Chemistry/Physics experiments-

3D models of the equipment will appear and by pressing a proceed/back button steps of the experiment will play out in reality.

(3) A user(Teacher) can share his/her live AR interactions with other multiple users nearby without internet and also remote users through the internet. In this case only the user sharing the screen can interact with the AR setting.

(4) The user who is sharing can grant/revoke other users to control the AR setting (e.g- point out different parts in case of biology figures).

Idea-2: Help Me V2.0 (Non-AR idea)

Existing features:

(1) Signup & Login by email address.

(2) Add emergency contacts by their phone number.

(3) Post for emergency help manually. The App sends SMS to emergency contacts with an URL. This URL opens up the Help Me website/app showing full details of a help post.

(4) Manual help posts consist of Text, Image(optional), sender phone number, current location & timestamp.

New Features:

(1) Sign-up and Login with phone number OTP code verification.

(2) Automatically detect physical assault by tracking off the shelf sensors found in smartphones- IMU sensor values (accelerometer, gyroscope) and GPS. Automatic detection is activated when the user turns on the "Emergency Mode" feature from the app settings.

Sensor values are to be firstly filtered using a noise filtration algorithm (such as- Kalman filter). The filtered out sensor values are then going to be used as features(inputs) for the Machine Learning model to detect physical assault. We are hoping to improve on this with the inclusion of a SmartWatch by tracking heart rate and blood pressure sensor values upon further study.

(3) After an automatic trigger for emergency help, the user's location & sensor data will continuously be tracked in real time, and will be visible from all emergency contact's app and the police administrative website(see option 5).

(4) Show nearest police station contact numbers to users. The data will be collected web-scraping the official DMP website- https://dmp.gov.bd/find-your-local-police/.

(5) An administrative website (& hybrid app for a particular police) for each police station in Dhaka city. Any help post (automatic or manual) in the area will show up on this website/hybrid app instantly.

(6) Any kind of access to the administrative website/hybrid app will be restricted to only a select few authorized IP/MAC addresses.

(7) The administrative website designed for police stations can be used to view a map with color coded areas according to frequency of help posts generated from that particular location, this color coded map will be visible from the user side app too.