

# IEEE Project

## Project Title:

An e-commerce app that focuses on Augmented Reality.

## Project Description

### Design and Code Breakdown

#### 1) WEBSITE

- **Frontend**

- **Design:** Sketch or wireframe the user interface and experience.
- **Implementation:** HTML, CSS, JavaScript for interactive elements and layout.

- **Backend**

- **Authentication (AUTH):** Implement user authentication using frameworks like OAuth, JWT, or Firebase.
- **ML Integration:** Integrate OpenCV into the backend for the AR functionalities.
- **Site Data through API Calls:** Set up APIs to fetch merchandise data, potentially utilizing RESTful API endpoints.

#### 2) AR (Augmented Reality)

- **Code Part (OpenCV):**

- Implement OpenCV functionalities to enable virtual try-on experiences.
- Utilize OpenCV for face tracking, feature recognition, and overlaying virtual merchandise.

- **GUI (Graphical User Interface):**

- Design an intuitive interface for the AR experience.
- Implement interactive elements for users to try different merchandise virtually.

- **Data Collection (Kaggle):**

- Gather and preprocess relevant datasets from Kaggle for training ML models if needed.
- Use Kaggle data for enhancing or training models related to anime-themed merchandise.

#### 3) Deployment and User Data Handling

- **Deployment:**

- Choose a hosting service (like AWS, Heroku) for deploying the website and AR functionalities.
- Ensure smooth deployment and integration of both frontend and backend components.

- **User Data Handling:**

- Implement secure storage and handling of user data, adhering to

- privacy standards like GDPR.
- Employ encryption and secure protocols for user data handling.

## Roadmap Overview

- **Planning Phase:**
  - Define specific features and functionalities of the website and AR components.
  - Gather necessary resources, including datasets, tools, and frameworks.
- **Development Phase:**
  - **Website:**
    - ◆ Start with frontend development (design and implementation).
    - ◆ Simultaneously, work on backend functionalities (authentication, ML integration, API setup).
  - **AR:**
    - ◆ Begin coding OpenCV functionalities for virtual try-on.
    - ◆ Develop the GUI for the AR experience.
- **Integration Phase:**
  - Integrate AR functionalities into the website's frontend.
  - Ensure seamless communication between frontend and backend components.
- **Testing and Refinement:**
  - Conduct rigorous testing of the entire system, including AR features and website functionality.
  - Gather user feedback and make necessary improvements based on testing results.
- **Deployment and Maintenance:**
  - Deploy the finalised system on a hosting platform.
  - Implement mechanisms for ongoing maintenance, updates, and user support.

Remember, this project requires expertise in web development, AR technologies, OpenCV, and possibly machine learning. It's crucial to break down tasks into smaller, manageable chunks and allocate sufficient time for each phase while considering potential challenges that may arise during development.

## Project Timeline

Week 1: Completing the Design and getting started with the frontend.

Week 2: Completing Frontend and getting started with the Backend.

Week 3: Completing Backend and getting started with ML development.

Week 4: Completing the ML part and majorly focusing on the integration part of the above 3 fields.