**E-commerce app with virtual try-on for clothes   
Software requirements specification**

**Introduction:**

The rapidly evolving fields of e-commerce continue to seek innovative approaches to enhance the consumer experience. Virtual try-on for clothes allows users to try on clothing items using digital platforms. It typically involves using different artificial intelligence (AI) techniques to compose virtual clothing onto a user's image in real time.

**User requirements**

1. The system shall allow the user to upload their photo and choose a garment to try it on virtually then show the resulting image of the try-on to the user.
2. The system should allow the registered user to save the resulting images.

**Functional requirements**

1. The system shall allow the user to register.
   1. Input: username, password, e-mail.
   2. Source: user.
   3. Output: create user account inside the system database.
2. The system shall allow registered users to log in inside the system.
   1. Input: username, password.
   2. Source: user.
   3. Output: transfer the user to the homepage.
3. The system shall validate user registration information to avoid any conflicts in the database.
   1. Input: username, password, e-mail.
   2. Source: user.
   3. Output: validation status message.
4. The system shall validate the user login information.
   1. Input: username, password
   2. Source: user.
   3. Output: nothing.
5. The system shall allow the user to upload or take an instant image with a digital camera.
   1. Input: 2D image (JPG, PNG, JPEG).
   2. Source: user.
   3. Output: preview for the user uploaded image.
6. The system shall validate the user uploaded extension.
   1. Input: 2D image.
   2. Source: system.
   3. Output: nothing.
7. The system shall allow the user to select the desired garment for try-on operation from multiple options.
   1. Input: 2D garment image.
   2. Source: saved system data, user image.
   3. Output: preview for the selected garment image.
8. The system shall use the desired garment input with human pose matching warping module to generate the warped garment matched with human pose.
   1. Input: 2D garment image, 2D user image.
   2. Source: system.
   3. Output: the warped garment matched with human pose.
9. The system shall use the warped garment to generate and return the final resulting image where the user is wearing the desired garment matched with his pose.
   1. Input: warped garment, 2D user image.
   2. Source: system.
   3. Output: the resulting try-on image.
10. The system shall show the user the resulting image returned from the Virtual try-on model.
    1. Input: 2D garment image, 2D user image.
    2. Source: system
    3. Output: generated try-on image.
11. The system shall allow the registered user to save or remove their resulting image.
    1. Input: generated try-on image
    2. Source: system
    3. Output: show status message for saving the resulting image.

**Non-Functional requirements**

1. The system should respond with the resulting image from the model within 30 seconds at most.
2. The system shall guarantee a safe way to save the user image and other information without any unauthorized access.
3. The system shall be user-friendly, easy to use and easy to navigate.
4. The system shall be compatible and adapt with different browsing environments.
5. The system shall provide try-on realism accuracy within 90% of cases at least.