# Software Requirements Specification

# for

# VIRTUAL CLOTHING SYSTEM

Version 1.0 approved

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Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
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# Introduction

## Purpose

The purpose of this SRS document is to illustrate the requirements of the project entitled **“VIRTUAL CLOTHING SYSTEM”** using machine learning (bodypix). This document gives the overall description of system features and the non-functional requirements of the project.

## Document Conventions

Entire document should be Left Alignment.

Convention for Main Title

* Font face : Times New Roman
* Font style : Bold
* Font size : 18

Convention for Sub title

* Font face : Times New Roman
* Font style : Bold
* Font Size : 14

Convention for content

* Font face : Time New Roman
* Font style : no
* Font Size : 12

## Intended Audience and Reading Suggestions

This document is to be read by developers team , Marketing department users, Product managers, Data analyst and tester .They may review the document to learn about the project and to understand the requirements. The document reader must have basic knowledge about machine learning.

## Product Scope

We have built web-base body scanning and measuring technology which enables to measurement of their body , get right size clothes and apply body data to wearing clothes virtually which will reduces time by having virtual trail instead of having a real trail for clothes.

The productproviding a contactless and personalized fit experience for user and drive down returns.

## References

Jason Mayes. "BodyPix:", " Real-time Person Segmentation in the Browser with TensorFlow.js".2019

# Overall Description

## Product Perspective

The main goal is to resolve the issues facing by the users during selecting the size from

available options. This is particularly a problem because different cloth brands define sizes (e.g., small, medium, large, etc.) We have built web-base body scanning and measuring technology which enables to measurement of their body , get right size clothes and apply body data to wearing clothes virtually which will reduces time by having virtual trail instead of having a real trail for clothes.The project providing a contactless and personalized fit experience for consumers, drive down returns and inventory, and apply body data to the apparel supply chain to create a more sustainable business model to help optimize processes, cut costs, and deliver better shopping experiences . Let your customers try on clothing, style outfits and find their perfect fit.Boost conversions, reduce returns and elevate your e-commerce experience.This product reduces time by having virtual trail instead of having a real trail for clothes .

## Product Functions

We have built web-base body scanning where they have 3 step .

**Scanning -** This step is used for getting the size of body such as chest, waist, leg, etc. buy scanning the body whit camera.Get 2 image from front and side view .Then we segment the image calibrate the camera and filed view , determined the pat of the body with in the segment (body pix).The measure the part of the body by the technique, known body ratios, e.g., head-to-height ratio, waist-level-to-height ratio, inseam-to-height ratio, etc., are used to approximately identify parts of the body such as chest, waist, leg, etc.

**Create model :**In this part we create the demo 3D model size of same as the person scanned and virtual cloth so that the person get an idea how he /she look after the wear of cloth .The challenges is to create web base application which support 3D model ( 360 deg view) and our approach one to use three.js which help to cerate model with good performance.In this step we get human data from previous step and with this date we dynamical generate the model suitable for the user

**Virtual trials** :We can change the different dress and trial virtually will save time by having virtual trail instead of having a real trail for clothes

## User Classes and Characteristics

**User**

Users can login to the website.

Maintain size ,products(Cloths) and Model.

Trial the cloths virtal .

When the user give the data of their body though manual or by using RCM ,the appication create the the 3D model of user with same size and user can change the different dress and trial virtually.

## Operating Environment

The product was built as web application ,So it support windows ,linux ,Mac ,Andriod ,IOS environment.

All the features will be compatible with the latest version of Mozilla Firefox ,Google Chrome etc,.

Stable Internet Connection is required for this product to run effectively.

## Design and Implementation Constraints

## User Documentation

The product will include the user manual. The user manual will include the product overview, complete configuration of the used software, technical details, backup procedure and contact information which will include email address.

## Assumptions and Dependencies

Network usage will be constant because of the continuous rendering of the system is requred during the change of models(human, dress).

Dependencies: it depend on number of liberies like ReactJS,ThreeJS,TensorFlow JS, Web GL, Face-Api JS

# External Interface Requirements

## User Interfaces

All the users will see the same login page when they enter this application. This page asks the users a mobile number/ email id and a password / Face lock.

After being authenticated by the user, users will be redirected to their corresponding profile where they can do various activities.

The user interface will be simple and consistent, using terminology commonly understood by intended users of the system. The system will have a simple interface, consistent with standard interface, to eliminate the need for user training of infrequent users*.*

## Hardware Interfaces

| **Component** | **Minimum** | **Recommended** |
| --- | --- | --- |
| Processor | 1.9 gigahertz (GHz) x86- or x64-bit dual core processor t | 3.3 gigahertz (GHz) or faster 64-bit dual core processor |
| Memory | 2-GB RAM | 4-GB RAM or more |
| Display | Super VGA with a resolution of 1024 x 768 | Super VGA with a resolution of 1024 x 768 |
| Camer | 0.3mp 30fps | 5mp and above with 60fps |

## Software Interfaces

All the interface will be a lightweight single page which has been developed in a react framework.

## Communications Interfaces

Communition between the model thought the JSON formate.

# System Features

## Virtual Trail

4.1.1 Description and Priority

A contactless and personalized fit experience for consumers, drive down returns and inventory, and apply body data to the apparel supply chain to create a more sustainable business model to help optimize processes, cut costs, and deliver better shopping experiences

4.1.2 Stimulus/Response Sequences

* Data is collected from the users.
* The collected data is processed to create the model .
* Users will be try the clothing, style outfits and find their perfect fit.

4.1.3 Functional Requirements

Need tensorFlow JS bodypix for segment the body parts and threeJS is requred for creating the 3D model on website.

REQ-1: TensorflowJS(BodyPix)

REQ-2: threeJS

# Other Nonfunctional Requirements

## Performance Requirements

The Performance Measurement is based on the accuracy with which the system detects and the internet speed. The higher accuracy rate of the system will reflect on the higher performance and efficiency of the system.

## Safety Requirements

Verify the user identity before renting products to eliminate scams.

## Security Requirements

To Store Data (Login Credentials) to database, data are converted to full secure format. Here we implement security to base on byte Encryption algorithm.

## Software Quality Attributes

* Maintain a user friendly environment that is visually appealing.
* Easy to see and use navigation.
* Maintain readable content

## Business Rules

Technology providing a contactless and personalized fit experience for consumers, drive down returns up to 37% which reduce the cost of retuning (pickup and Deliver charges ) and customer have a open mind for the new fashion with great customer satisfaction and inventory.

# Other Requirements

Appendix A: Glossary

RCM -Real-time Clothing-Size Measurment