Logo, company name

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**PUSL3190 Computing Individual Project**

**Project Proposal**

Virtual Dress Fitting

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Based on

As reported by

As stated by

apparel retailers

online clothing sales

ecommence apparel retail

retail ecommence sales

Global retail ecommerce sales worldwide

**Impact of Virtual Try-On Technologies** to improve user satisfactions

Considering both the user’s manual measurement and material attriiutes/metrial

user's manual measurement and the material-related size

# Chapter 01

## **Problem statement**



**Figure 1** (Administration, 2021)

After the covid19 pandemic in 2019, the worldwide online shopping sales has rapidly increased as shown in the above figure 1. Furthermore, 8 percent of increment in online shopping sales can be seen within next couple of years in comparison to past years, for all sectors including fashion clothing (Administration, 2021).

However, compared to the huge online clothing purchasing rate, the return rates of the clothing items also claimed to be high.

According to a survey conducted by Coresight Research in US apparel brands and retailers, discovered that the average return rate of online apparel sales in US is about 24.4% (Coresight\_Research & Zheng, 2023). The reasons for high return rates in online clothing are people having different body shapes and the user body measurements and clothing brand’s size chart measurements or each clothing item’s specifications are not being matched. Besides the material of the clothing item should also be considered when considering with the sizes.

According to Statista, comparing to other retail product categories such as shoes, bags and accessories, clothing items have the highest returned rate which is 26% among all the categories. (Dopson, 2023). All these researches show that customers are not happy with the purchases they made through online mostly in clothing apparel category.

# Chapter 02

## **Project description**

### Project Objectives

* Predicting the clothing size that fits well for the user according to the given body measurement, while considering the material attributes.
  + According to the Coresight Research Analysis based on the survey, more than half of the respondents which is about 53% selected size or fit as the reason for the online apparel returns. Most returns included shirts and blouses (Coresight\_Research & Zheng, 2023).
  + A mobile application and a web application are used in this system. Mobile application is for the user to enter the user-specific body measurement which is the chest size. Then that data would be sent to the related database.
  + A web application is given for the clothing brands to store the size charts with its size measurements. Such as small (S) , medium (M) , large (L) , extra-large (XL), etc.., and its measurements are saved in another database as in the chart shows below.
  + A mathematical model would compare both the user specific measurement and the clothing material, then predicting the best perfectly fitting clothing size (UK size) for the chosen clothing item by the user.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Size | Small (S) | Medium (M) | Large (L) | Extra-Large (XL) |
| Shoulder width (in) | xxx | xxx | xxx | xxx |
| chest size (in) | xxx | xxx | xxx | xxx |
| Waist size (in) | xxx | xxx | xxx | xxx |
| hem size/ Hip size (in) | xxx | xxx | xxx | xxx |
| sleeve circumference/  Bicep (in) | xxx | xxx | xxx | xxx |

* Ability to select a clothing material first and based on that searches the available items.
  + A feature for the customer to first select a material such as cotton, linen, silk, etc. Then the user could search/ select a suitable clothing item from the chosen material.
  + This value-added feature benefits the users to find the exact same material that they are searching for. When the ordered or selected clothing item is delivered, can find whether it has the exact same material attributes. This minimizes low quality and wrong order delivering. Thus, increases brand loyalty.
* Able to improve online shopping experience.
  + With the high apparel return rates mostly in blouses and shirts as mentioned in the page number [3](#_Problem_statement), this system assists the users to find the well fitted clothing items while reducing the return rates.
* Able to improve the in-person shopping /physical shopping experience.
* Shopping malls which have different clothing brands, this system can be introduced as a new feature/ development to their already existing mobile or web application(s), which enhances the user experience.

### Project keywords

* Mathematical Model
* Android Studio
* Java
* MongoDB
* Nodejs

Chapter 03

# **Research Gap**

Chapter 04

# **Requirements Analysis**

### Hardware Requirements

### Functional Requirements

Tasks and features that system has or needs to do.

* Shows the well-fitting size of the selected clothing item.
* Searches the clothing items according to the material.
* Shows the available clothing items of clothing brands and its material in the web application.
* Asks authentication when login to the system.

### Non-functional Requirements

* Reliable system for the users (can make accurate predictions).
* Better user experience and user-friendly applications.
* Data is protected and secured in both clothing brand and user ends.

Chapter 05

# **Finance**

This project does not require any hardware equipment. In addition to that, requirement of paid software tools/License, APIs or high-end GPUs are also not required for this project as for now.

Chapter 06

# **External organizations**

This project does not involve an external party, or any real client. However, a survey is used for gathering the data based on material-related sizes according to the user body measurements.

A screenshot of a survey

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A screenshot of a chat

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Chapter 06

## **Time Frame / Timeline**

A close-up of a graph

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# **Referencing / Bibliography**

# **References**

Administration, I. T., 2021. *eCommerce Sales & Size Forecast.* [Online]   
Available at: https://www.trade.gov/ecommerce-sales-size-forecast  
[Accessed 10 November 2023].

Coresight\_Research & Zheng, S., 2023. *The True Cost of Apparel Returns: Alarming Return Rates Require Loss-Minimization Solutions.* [Online]   
Available at: https://coresight.com/research/the-true-cost-of-apparel-returns-alarming-return-rates-require-loss-minimization-solutions/  
[Accessed 13 November 2023].

Dopson, E., 2023. *Ecommerce Returns: Expert Guide to Best Practices (2024).* [Online]   
Available at: https://www.shopify.com/enterprise/ecommerce-returns  
[Accessed 12 November 2023].