

# SMART FASHION RECOMMENDER APPLICATION

IBM – LITERATURE SURVEY

## UNDER THE GUIDANCE OF

*Industry Mentor(s) Name : Krishna chaitanya*

*Faculty Mentor(s) Name : JASMINE A*

## SUBMITTED BY:

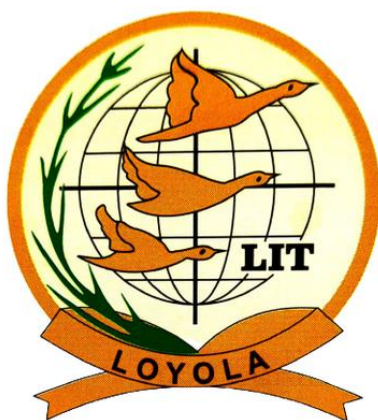
ABISHEK .J - 210919106005

KUMARESAN.R 210919106048

KEERTHIVASAN.K - 210919106044

KENDRICK.J - 210919106045

GANESH.S 210919106028



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

LOYOLA INSTITUTE OF TECHNOLOGY

2019-2023

## **CASE STUDY-1**

### **TITLE**

Fashion Recommendation Systems, Models And Methods

### **AUTHORS**

Samit Chakraborty , Md. Saiful Hoque , Naimur Rahman Jeem , Manik Chandra Biswas , Deepayan Bardhan and Edgar Lobaton : 2021

### **PROJECT DESCRIPTION**

Recommendation system (RS) is referred to as a decision-making approach for users under a multidimensional information environment . RS has also been defined as an e-commerce tool, which helps consumers search based on knowledge that is related to a consumer's choices and preferences. RS also assists in augmenting social processes by using the recommendations of other users when there is no abundant personal information or knowledge of the alternatives.

There are several Algorithmic Models used in Fashion Recommendation Systems and they are Convolutional Neural Network (CNN), Recurrent Neural Network (RNN), Multilayer Perceptron (MLP), Generative Adversarial Network (GAN), k-Nearest Neighbor (kNN) , Autoencoder (AE) and Bayesian Networks. The study of algorithmic models revealed that researchers achieved better recommendation accuracy when combining multiple algorithms and techniques together rather than using a single algorithm-based baseline model.

## **CASE STUDY -2**

### **TITLE**

Predicting Customer Lifetime Value with AIP Platform on cloud based e-commerce website or web application

### **AUTHOR**

Ziv Pollak:2021

### **PROJECT DESCRIPTION**

Predicting customer future purchases and lifetime value is a key metrics for managing marketing campaigns and optimizing marketing spend. This task is specifically challenging when the relationships between the customer and the firm are of a noncontractual nature and therefore the future purchases need to be predicted based mostly on historical purchases. This work compares two approaches to predict customer future purchases, first using a “buytill-you-die” statistical model to predict customer behavior and later using a neural network on the same dataset and comparing the results. This comparison will lead to both quantitative and qualitative analysis of those two methods as well as recommendation on how to proceed in different cases and opportunities for future research.

## **CASE STUDY -3**

### **TITLE**

Building an e-commerce recommendation system by using  
Big Query Machine Learning

### **AUTHOR**

Farah Tawfiq Abdul Hussien , Abdul Monem S. Rahma :2021

### **PROJECT DESCRIPTION**

The technological development in the devices and services provided via the Internet and the availability of modern devices and their advanced applications, for most people, have led to an increase in the expansion and a trend towards electronic commerce. The large number and variety of goods offered on e-commerce websites sometimes make the customers feel overwhelmed and sometimes make it difficult to find the right product. These factors increase the amount of competition between global commercial sites, which increases the need to work efficiently to increase financial profits. The recommendation systems aim to improve the e-commerce systems performance by facilitating the customers to find the appropriate products according to their preferences. There are lots of recommendation system algorithms that are implemented for this purpose. However, most of these algorithms suffer from several problems, including: cold start, sparsity of user-item matrix, scalability, and changes in user interest. This paper aims to develop a recommendation system to solve the problems mentioned before and to achieve high realistic prediction results this is done by building the system based on the customers' behavior and cooperating with the statistical analysis to support decision making, to be employed on an e-commerce site and increasing its performance. The project contribution can be shown by the experimental results using precision, recall, F-function, mean absolute error (MAE), and root mean square error (RMSE) metrics, which are used to evaluate system performance.

## **CASE STUDY 4**

### **TITLE**

Image-based fashion recommender systems

### **AUTHORS**

Shaghayegh Shirkhani : 2021

### **PROJECT DESCRIPTION**

In this Literature review, it is illustrated that a big picture on different research approaches towards fashion recommender systems. The trajectory of studies in fashion recommender systems from the very beginning is introduced.

Representing what makes the fashion domain distinguished from other recommender system domains, the sources of complexity in the fashion domain by illustrating how interconnected these concepts are, as a framework that any fashion recommender system can be defined and understood through it are conceptualized. Focusing on image-based fashion recommender systems, a four main tasks are identified in fashion recommender systems, bringing their characteristics to the fore, including cloth-item retrievals, Complementary item recommendation, Outfit recommendation, and Capsule wardrobes. The studies which have been conducted in each category also have been introduced. In addition, the evolvement trajectory of image-based fashion recommender systems are provided , which consists of three main eras, in addition to considerations of the most recent advancements in computer vision and deep learning-based methods. Finally, the DL-based fashion recommender systems based on employing one single neural network or deep hybrid neural networks with highlighting the methods they used and the input are categorized.