1. Introduction

Background:

Fashion Retail is in millions with millions of Retailers around the world. The biggest problem they face is how to manage inventory as every customer has his unique choice and want to have different product from others and it create lot of problems for the retailer in order to keep a huge inventory, Managing Big Warehouse, Having Resource to manage the work, and in all of the process a huge financial cost is associated.

Problem:

Data Sciences can help to minimize the inventory level, reducing financial Cost and offering more customization to the customer needs by developing a machine based on data as mentioned below:

1. Size of feet
2. Feet shape of Customer
3. Height of Customer
4. Weight of Customer
5. Type of Sole that's best fit the customer
6. Upper of Shoes Available in Inventory
7. Buckle off Shoes available in the Inventory

Interest:

Obviously, Retailers would be very interested in improvement, for competitive advantage and business values. Currently a Retail Company in Pakistan **Ehsan Chappal Store** https://www.shopecs.com/ is interested in developing this Data Driven Model to minimize the finished goods inventory and to minimize their cost and giving high level of customization to the customer.

2. Data acquisition and cleaning:

Data sources:

ECS is providing us all the data required to make this model which include the following.

1. Size of feet
2. Feet shape of Customer
3. Height of Customer
4. Weight of Customer
5. Type of Sole that's best fit the customer
6. Upper of Shoes Available in Inventory
7. Buckle off Shoes available in the Inventory
8. Any other relevant information

Data cleaning:

There are many problems in the Data and these are identified by making different correlation with each other and it is being sorted to make a streamed line data sheet which can give us a desired result once programed.

For example, correlation between height and type of sole recommended to the customer and if customer do not want to use the recommended sole what should be advised to the customer. Similarly, work is done for weight, shape of feet and other variable.

Relationship between Different Variable:

A complete algorithm is defined to develop a relationship between all the variables and required output. For the all the model is trained to produce desired output for each customer.

Solution to the problem:

Once all the programing is done it is executed and a frontend is being developed for the Customer use on trial basis and Linking up the required hardware to the program so that more precise and Customized solution can be provided to the Customer.

Conclusions:

In conclusion we found that through Machine Learning and Data Science we can design a post Mix Machine for a Shoes industry where Customer Can Design their shoes with their own requirement and choice and Fashion industry can be given a new road to success and minimizing Financial cost of Inventory.

Future of the Industry:

In Near Future we are ambitious to build a complete machine and deploy it at some of the stores and work on continuous improvement of the machine and identify the opportunities to use more precise and suitable tools, Technique and Data to get best out of it.