Data Science Project Management

Case Study 1
Group-2

Team Members	Tasks
Ahmad Iqbal	Data Visualization + Presentation
Arshpreet kaur	Data Visualization + Documentation
Abhiram Pazhuvelil Sathyan	Documentation + Github
Basant Singh	CNN + Image PreProcessing
Keerthi Reddy Dokuri	Dashboard + Data Preprocessing
Meenakshi Remadevi	Data Visualization (Tableau) + Presentation
Muhammad Anas	Data Visualization + Data Preprocessing
Muhammad Hasan	Dashboard + Image PreProcessing
Nigel George	Github + Data Visualization (Tableau)
Tony Regi Jacob	CNN + Model Tuning

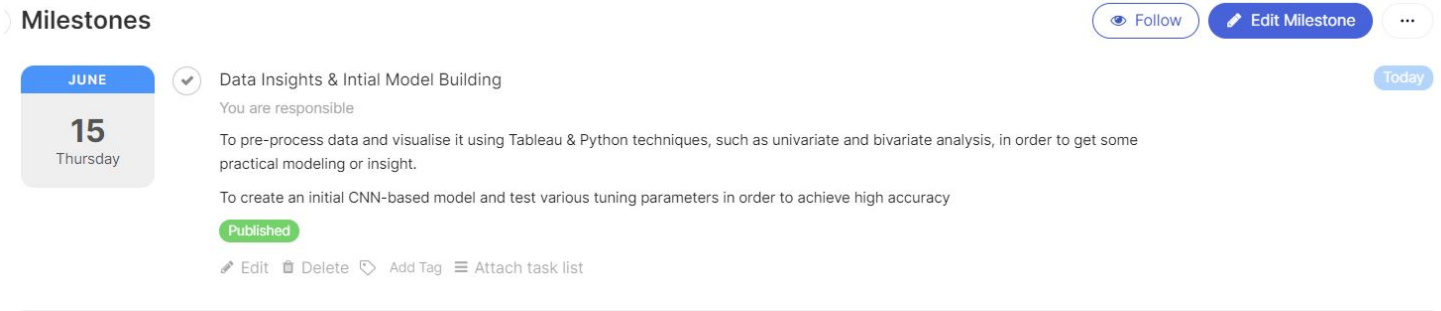
Table of Content

Tasks To Do

- Updates to the project process in both the code and the project board
- Python notebook, sequentially executed code and an HTML file
- Updated Project Board and Git repository

Update on Dashboard

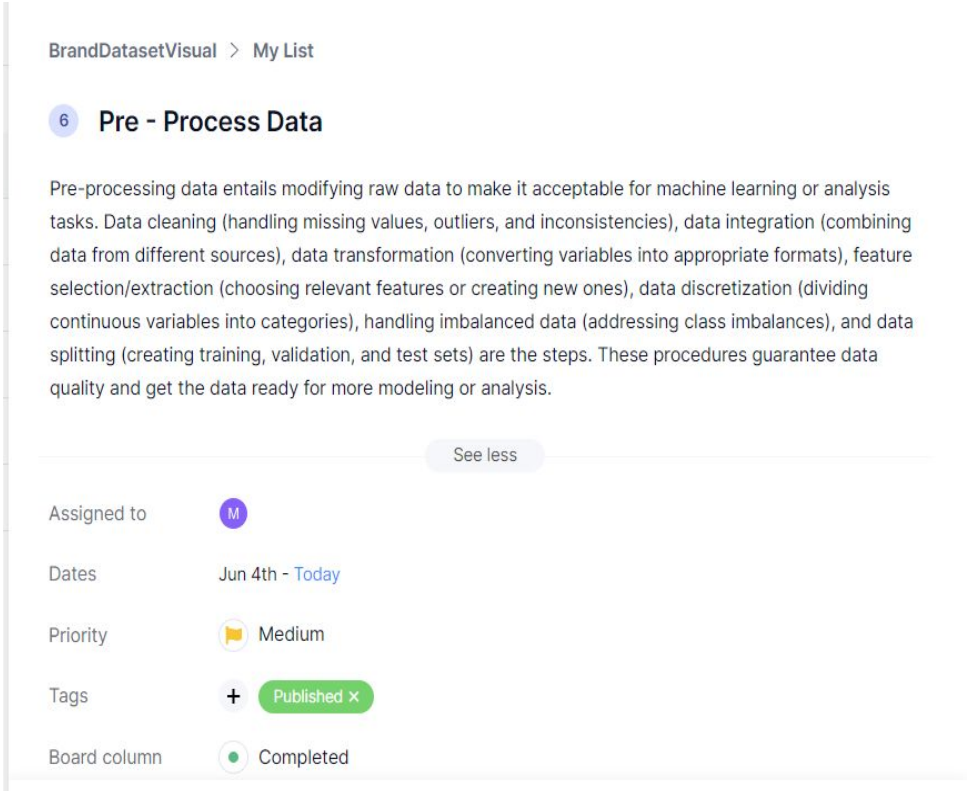
Added **Milestone** On Dashboard to create Data Insights using Visualization and to build Initial CNN Based Model



Update on Dashboard

Created and **assigned** Tasks among all team members to get a real time update from each member about every single task.

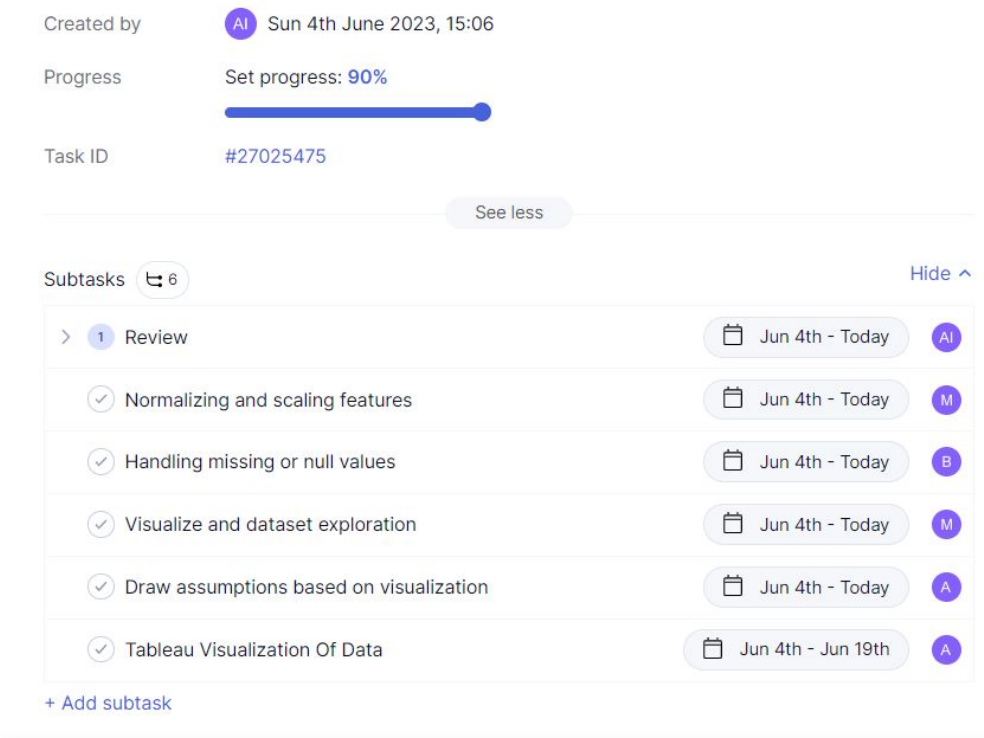
Used **Tags** and **Priority** tasks to know about **severity** and **current status** of tasks.



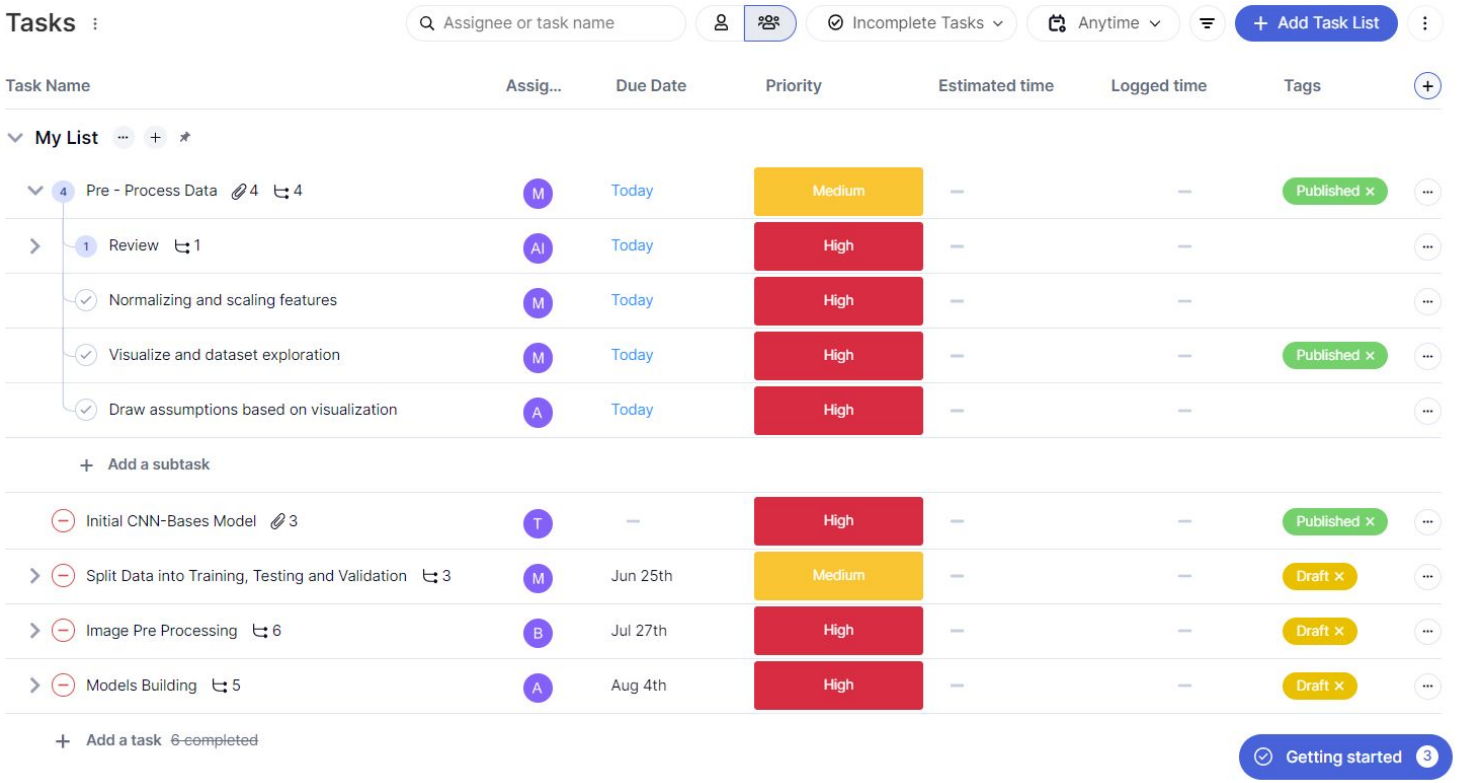
Update on Dashboard

Created **subtasks** for every team member and **details added** to subtasks along with declaring **prerequisite** as well as deadlines.

Added **Code Screenshots** to dashboard to keep the the members updated about other's task.



Tasks Breakdown



Data Visualization and Insights

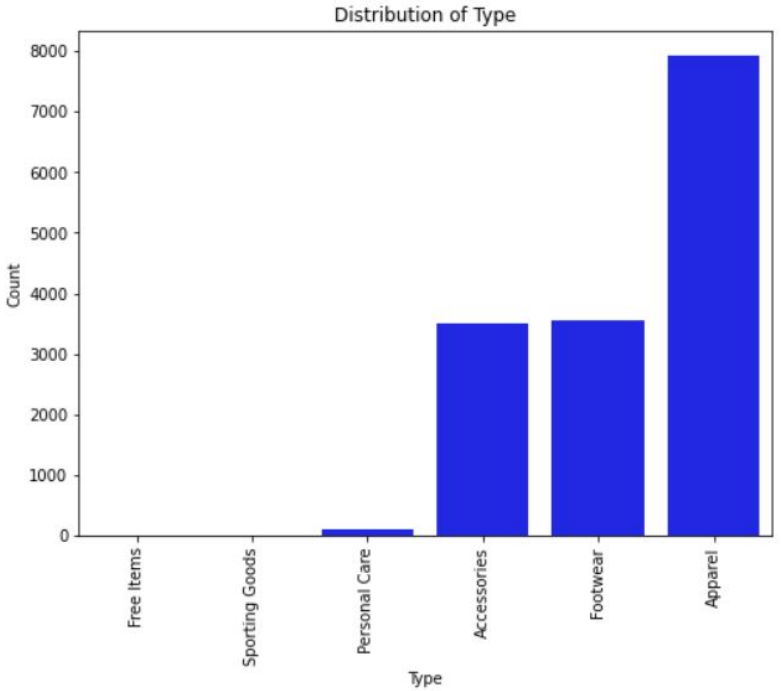
We have 9 unique categorical variables in our dataset among which further types are there

ID	GenderType	Type	SubType	Article	PrimaryColor	Seasonal	Year	Use	Brand
39386	Men	Apparel	Bottomwear	Jeans	Blue	Summer	2012.0	Casual	Peter England
59263	Women	Accessories	Watches	Watches	Silver	Winter	2016.0	Casual	Titan
53759	Men	Apparel	Topwear	Tshirts	Grey	Summer	2012.0	Casual	Puma
29114	Men	Accessories	Socks	Socks	Navy Blue	Summer	2012.0	Casual	Puma
9204	Men	Footwear	Shoes	Casual Shoes	Black	Summer	2011.0	Casual	Puma

Data Visualization and Insights

The graph shows the types of Items **Wearable Items**

Apparel, **Footwear** and **accessories** are the highest used items by customers.

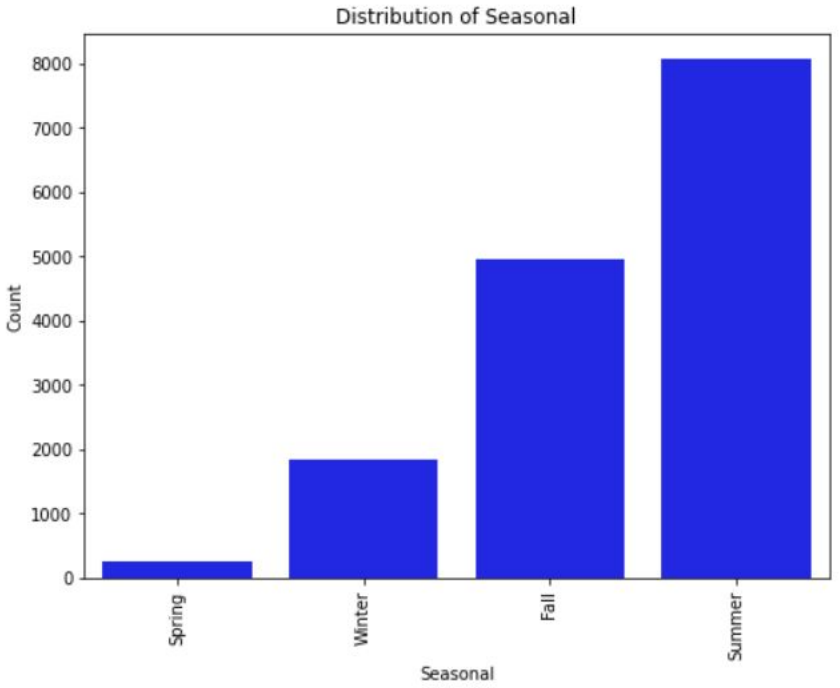


Data Visualization and Insights

The graph shows the **high** tendency of **summer's** product usage by customers

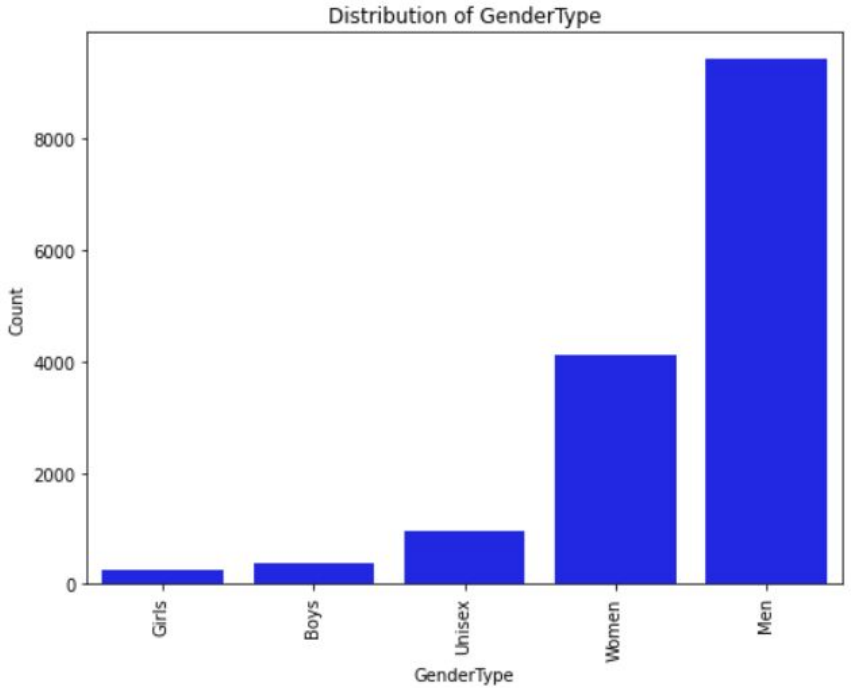
Fall is the 2nd highest with **winter** 3rd.

While **spring** is the least.



Data Visualization and Insights

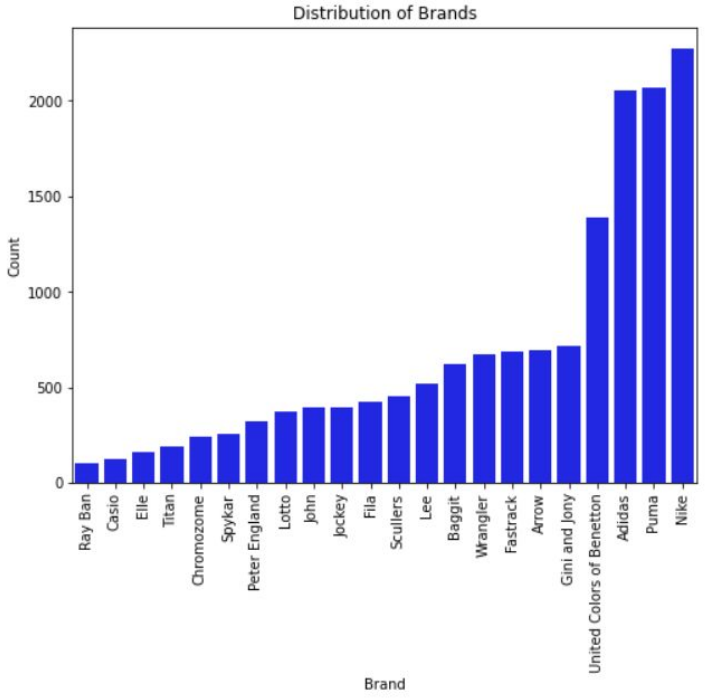
Men’s are the most user of products with women’s second highest



Data Visualization and Insights

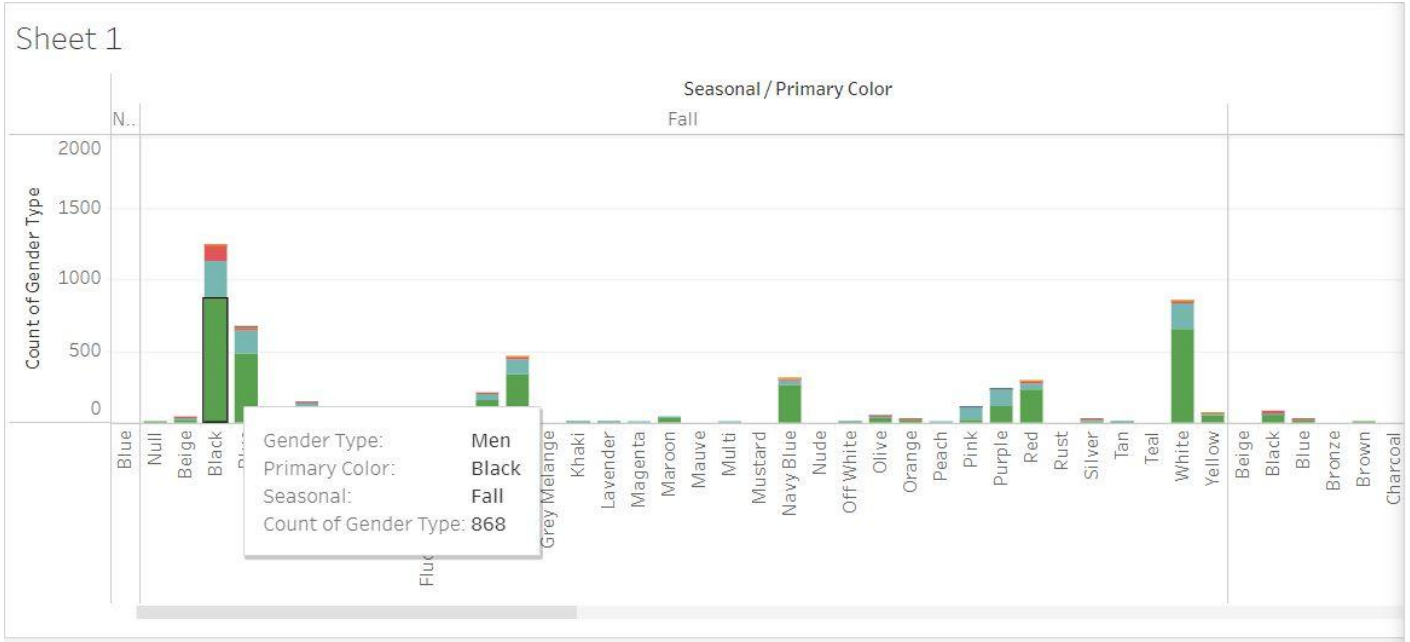
The graph indicates that customers loves to buy products from Nike, Puma and adidas

Whereas very few number of customers buys from Ray ban.



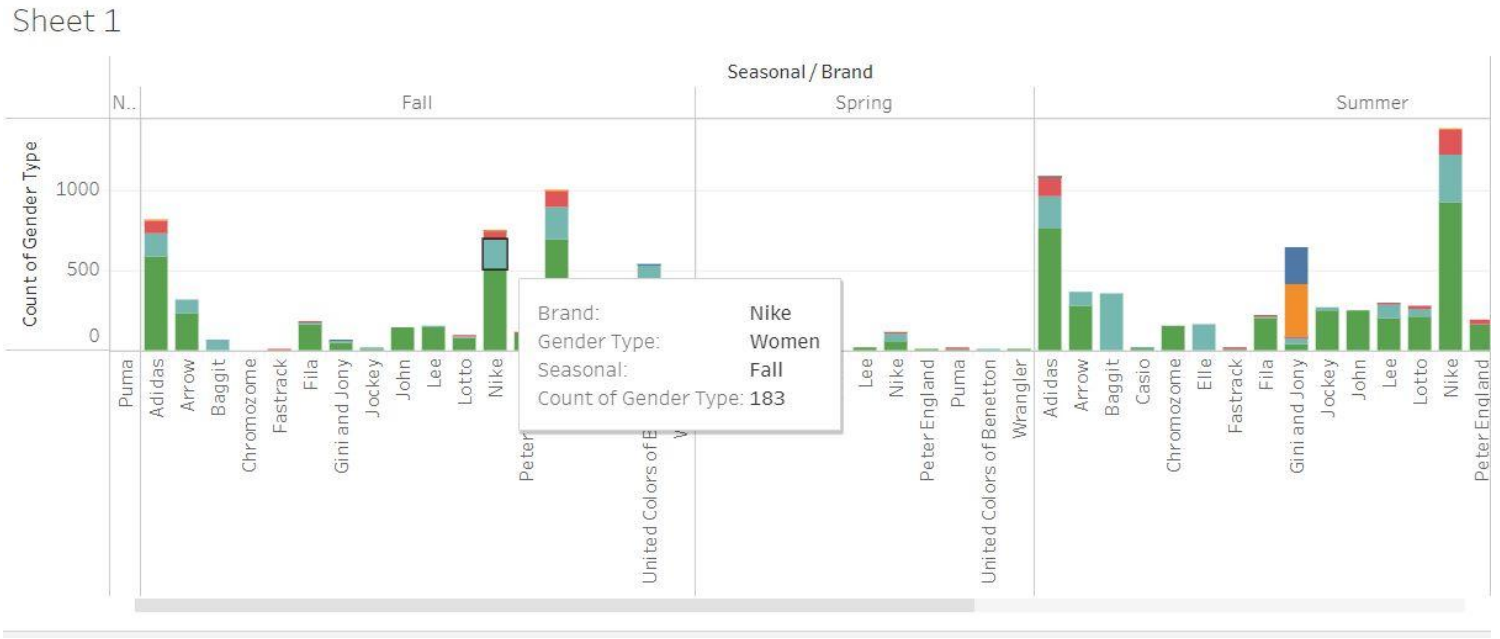
Data Visualization (Tableau)

The **colour** most worn by particular genders in a specific season



Data Visualization (Tableau)

The **Brands** worn by different gender types in different seasons



Data Visualization (Tableau)

The **items** and **number** of item users among all seasons

Sheet 1

Gende..	Sub Type	Seasonal				
		Null	Fall	Spring	Summer	Winter
	Flip Flops		103	8	170	7
	Fragrance			55		
	Free Gifts				1	3
	Gloves		5			
	Headwear		29	1	24	2
	Innerwear		7		366	91
	Loungewear and Nightwe..		4		13	11
	Mufflers		6		5	
	Sandal		132	14	138	9
	Scarves		2		8	
	Shoes		767	32	1,300	17
	Socks		60	1	145	1
	Ties		3		33	
	Topwear	1	2,040	23	1,909	36
	Wallets		16		94	13
	Watches				31	448

Data Pre-Processing

- Data Preprocessing is done to distinguish between **Real** and **fake Images** available in dataset
- Separated **IDs** for Real and Fake images used for Model
- Train Test **split** is done in **70:30** ratio
- Processed the images using various techniques that includes **gray scale, rotation range, zoom range , width and height range, horizontal flip, and fill mode**.

CNN

- Built and used **CNN** Model to Classify target variable
- **Relu** and **Sotmax** functions were used as activation function
- **Adam** Optimizer helped to increase the accuracy to a great extent
- Used **12** epoch for the model to run and learn every time

Results

We only scored **69.79%** for our initial Model, which is not very good.

We obtained an **AUC** of **0.771**%, which indicates that the model can distinguish between positive and negative outputs with reasonable accuracy, but still we were unable to do so.

Out of 14000 data points, we got **3900** True Negative Values , **661** False Positive Values, **7429** False Negative Values and **1307** True Positive Values which shows that our model has potential to learn but still we need to work more on model parameters.

After visualization , we came to know we have lots of **categorical** and highly **unbalanced** data that make it difficult to train **CNN** on it.

Due to highly unbalanced data, AUC and other kernel would be very less, and ultimately it would be tough for our model to learn from data.

Links

Github

https://github.com/Tonyrj/Data-Science

Project Dashboard

http://surl.li/ibtnd