A close-up of a person

Description automatically generated

**Visualization of Complex Data**

**DATS 6401**

**Project Proposal**

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**Project Topic – Analyzing Sales from a European bike store**

The dataset I’ve chosen for my term project captures Daily sales data from different countries, for a European Bike store. The dataset is rich in observations, containing roughly 110K rows of data . In addition to this, it contains information about the customers and the purchases, such as the customer demographics like gender, age, country and state (of purchase), as well as the product category, sub-category, order quantity etc. This allows for multiple interesting static as well as dynamic plots that can help uncover interesting insights into the data.

**Static Plots** - For the static plots, I would like to find out the bivariate and multivariate relationships between each feature, to better understand customer purchasing patterns, as well as find correlations between revenue generated and various other factors such customer background, product type and time of the year. I plan to also analyze how the data distributions look like for these categories, as well as determine the major customer base for this store. Finally, I also hope to uncover some interesting time series trends such as shift in customer purchasing patterns, or acquisition of new types of customers.

**Interacting Plots and Dashboard** - Following up from the analysis done using the static plots, I would like to setup a user friendly scrollable dashboard, that allows the user to select a combination customer metrics such as age, gender or country, and visualize sales metrics like profit or revenue. I plan to make the charts diverse by including different types of visuals such as pie charts for showing sales contributions, line and bar charts for showing trends, and scatter plots for showing relationships. Each of these will contain dropdowns or selections, that allow the user filter on specific categories. Finally, I will also create a motion chart to view dynamic trends, similar to the gap minder visual ([link](https://www.gapminder.org/tools/#$ui$projector:true;&model$markers$bubble$encoding$frame$value=1813;;;;;&chart-type=bubbles&url=v1))