

Time Series Final Project Proposal

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Class: Applied Time Series Analysis for Forecasting
Section: MW 11:00 am

- **Introduction & Motivation**

In the world of fashion, there is a phrase "What goes around comes around". Styles that were popular in the 1990s might resurface in the 2020s, such as bike shorts. Leveraging Google Trends data, we aim to explore whether fashion is a cyclical phenomenon in the public's perception or merely a random occurrence. While fashion is a broad concept, this project focuses on specific fashion trends to yield meaningful results. Our goal is to predict the return of a particular fashion trend using time series data, benefiting fashion enthusiasts and brands.

- **Business Problem Statement**

This analysis investigates the cyclical nature of specific fashion trends and aims to forecast their future cycles to benefit fashion enthusiasts and brands.

- **Objective of the analysis**

By predicting future fashion cycles, our analysis intends to provide value to stakeholders in the fashion industry and fashion followers. For fashion brands and buyers seeking to maintain their position in the industry or improve their bottom line, our analysis offers insights into the potential resurgence of specific fashion trends. Armed with this information, they can proactively prepare in various business aspects to outpace their competition when they understand their customers' desires. Design, supply chain, marketing, and event planning teams can all have ample time to prepare products before the new trend reemerges. Additionally, major e-commerce platforms like Amazon, which heavily relies on data for personalization and predicting future customer interests, can use this information to prepare in advance and introduce the latest trends to their users. Lastly, fashion enthusiasts and influencers looking to stay ahead of their peers can gain insights into upcoming trends, allowing them to showcase these trends before they become widely recognized in the fashion world.

- **Data & data source**

Our group discovered the fashion trend dataset using Google Trends. This dataset contains valuable insights into the popularity and interest in various fashion trends over time. Our dataset covers the period from 2004 to present with monthly precision. By analyzing the data, we can gain a deeper understanding of how fashion preferences evolve, helping us stay ahead of the curve in the ever-changing world of style. We will also join the data with other datasets such as macroeconomic indicators to see the relationship between the fashion trends and these variables.

- **Expected business insights**

- How the brands can use this analysis to secure their competitive advantage or disrupt the industry by preparing in advance their business, production, and marketing strategies.
- Enabling marketers to set marketing timelines and optimize marketing costs on channels because of the knowledge of the return of specific fashion trends.
- How the business team launches go-to-market strategies for different subregions based on different intents of interest.

- **Variables to construct any additional KPIs**

- Economic factors: Include macroeconomic indicators such as CPI, interest rate, and unemployment rates to understand how economic conditions influence fashion trends and consumer purchasing behaviors.
- Weather data: Consider weather-related variables such as temperature and precipitation to assess how weather patterns impact fashion trends.
- Material costs: Changes in material costs influence the pricing and availability of fashion products, ultimately impacting consumer demand.