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**Comparing Traditional vs. AI-driven  
Forecasting Models: Evaluating the  
Prediction Accuracy of Fashion Trend  
Lifecycles at the Saturation Stage**



# **Fashion** *Forecasting*

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As the fashion industry races to keep up with even-shorter trend cycles, accurate forecasting is more critical than ever - for business, culture, and sustainability. My dissertation explores whether neural networks can outperform traditional statistical methods in predicting the saturation stage of fashion trends - the pivotal moment when a trend stops growing and starts to decline.

Using a multimodal approach - Street Fashion Trend (visual trend frequency), Google Trends (search interest), and OpenWeather (climate data) - I developed and compared two models: the statistical ARIMA and the AI-based LSTM. The quantitative approach compares two different case studies (Zara dress and Chanel bag) to further compare the luxury and fast fashion markets.

AI didn't just perform - it predicted the future. The LSTM model beat ARIMA across the board, nailing the stage where the trend starts to fade. As a plot twist, more data didn't always mean better predictions. Models using just visual trend data were sharper and more accurate than those crammed with weather stats and search interest. Turns out, simplicity isn't just stylish but also powerful.

Imagine knowing exactly when a trend is about to die - before shelves are overstocked and markdowns begin. Smarter forecasting means less waste, better timing, and bolder creative decisions. This isn't just a tool for brands - it's a blueprint for a more sustainable and intelligent fashion future.