

# Week 11 - Demand Forecasting

## Question 1: How does AI tackle retail demand forecasting challenges?

### 1. Handling Large and Complex Data:

- AI can analyze massive amounts of historical sales data, customer behavior, seasonality, market trends, and external factors (like weather or economic conditions) much faster and more accurately than traditional methods.

### 2. Dynamic Pattern Recognition:

- AI models automatically recognize and adapt to changing consumer buying patterns, special events, promotions, or new product launches without manual intervention.

### 3. Real-Time Forecasting and Updates:

- AI systems can continuously update forecasts in real time based on incoming new data (such as sudden shifts in customer preferences or supply chain disruptions).

### 4. Multi-Channel Integration:

- AI can combine data from online sales, in-store purchases, mobile apps, and third-party marketplaces to create a unified and accurate demand forecast across all retail channels.

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## Question 2: List the benefits of accurate AI-powered demand forecasting in retail industries

### 1. Reduced Stockouts and Overstocks:

- Retailers can maintain optimal inventory levels, reducing the chances of running out of stock or overordering goods.

### 2. Improved Customer Satisfaction:

- When the right products are available at the right time, customers have a better shopping experience, leading to higher loyalty and repeat purchases.

### 3. Cost Efficiency and Higher Profit Margins:

- Better forecasting reduces storage costs, wastage, and discounting of unsold inventory, which directly improves profitability.

### 4. Better Decision Making and Planning:

- Accurate forecasts help retailers make smarter decisions regarding purchasing, pricing, staffing, marketing campaigns, and supply chain management.