FINANCIAL FORECASTING USING MACHINE LEARNING

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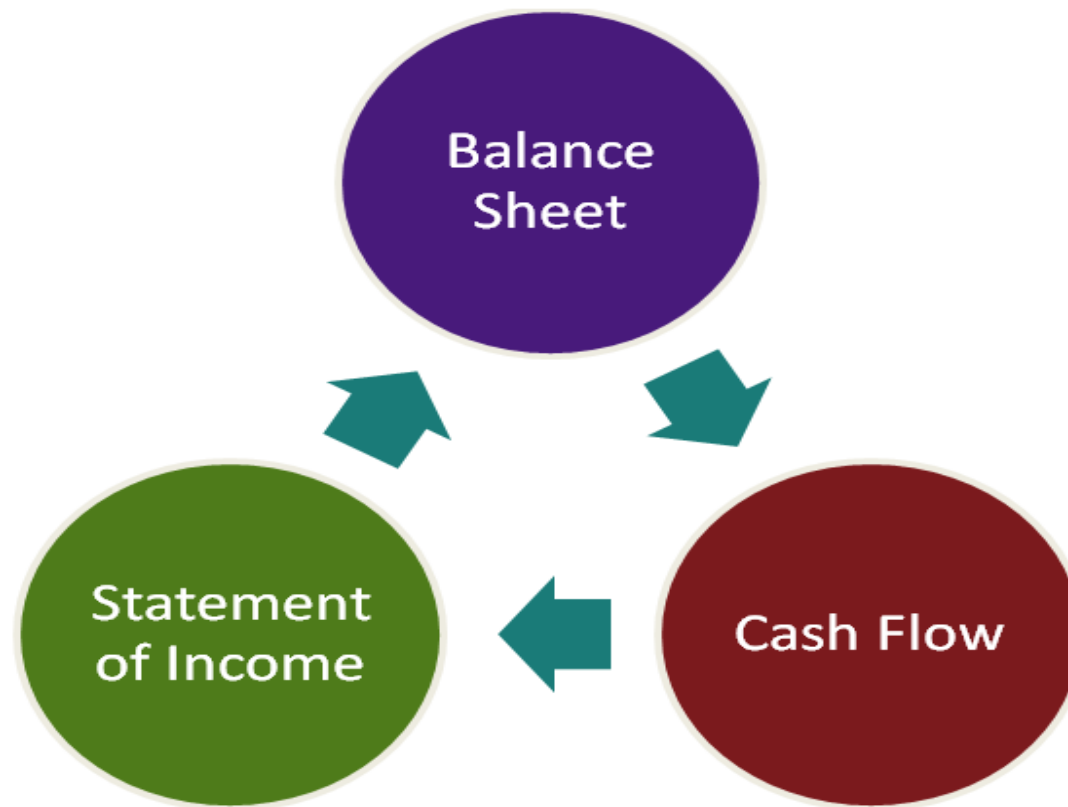## 2248042

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CONTENT

- Financial forecasting
- What is Ml
- Window method
- Multi layer perception
- Time series forecasting
- Available technology for ML
- Pro's Of Ml in financial forecasting
- Summary

FINANCIAL FORECASTING

- Estimating,processing,or predicting a business's future performance is called financial forecasting.
- It involves in business decision making.
- It helps us to maintain forward- focused mindset.
- It starts with sales forecast
- Ends with a forecast of how much money you will spend(net) of inflows to get those sale

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What are the Basic components of Financial Forecasting?

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Importance of financial forecasting

- Understanding the business model

- Finding the uncertainities

- Planning of a oraganization

- Using new opportunities
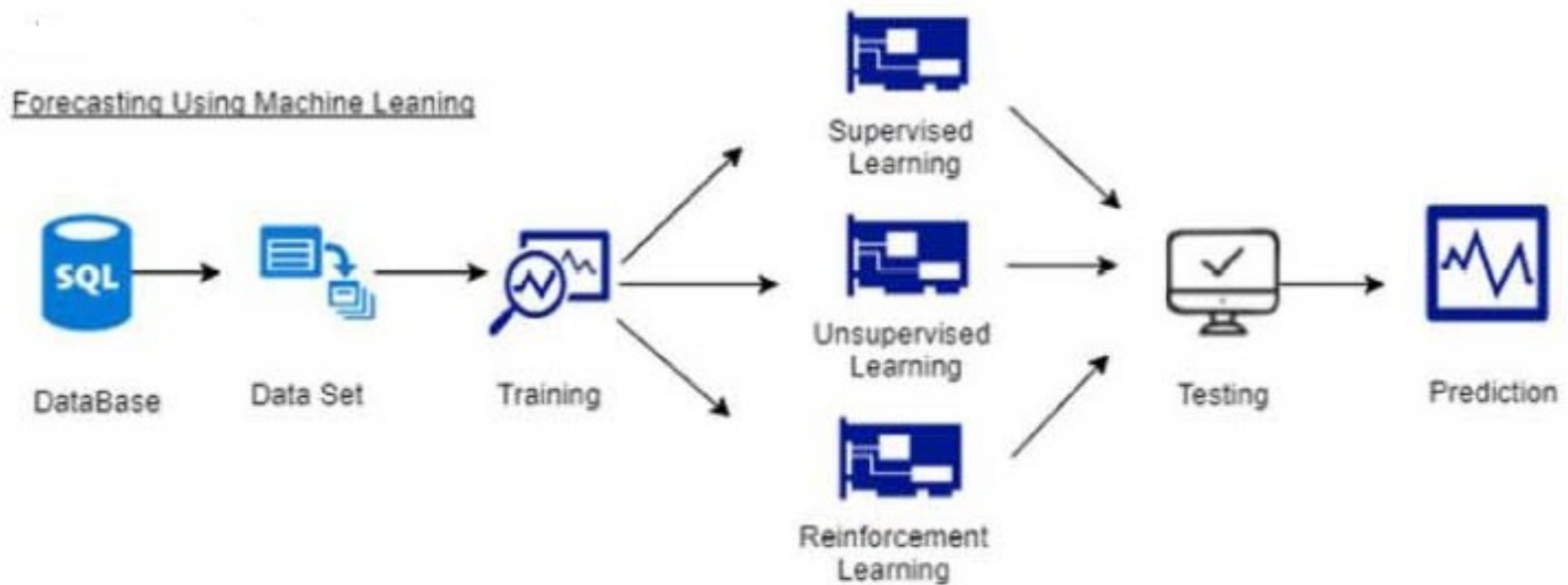
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Some statistics of AI uses in Financial Forecasting

- A compound annual growth rate of 25% within 2022 and reaching a market revenue of $309 billion of Fintech is forecast to achieve

- The broader financial services market is expected to cross the milestone of $26.5 trillion by 2022,growing with 6% of the compound annual growth rate(GAGR)

- Almost $447 billion is estimated as cost savings for banks using forecast AI by 2023.Which is currently approximately $100 billion

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What is ML and Why?

- Machine learning is a tool to extract knowledge or pattern from data.

- We use ML for financial forecasting to predict/supply/demand/inventory of the market,and improve the business performance

- How ML create value?

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Forecasting using machine learning

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Financial forecasting using Machine Learning

Financial Forecasting Using Machine Leaning

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How to implement it?

- Multi-layer perception.

- Time series forecasting

- Window method

- Gaussian Process

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Window method

- What is window method?

- What are the types of window method?

- What tools are used in window method?
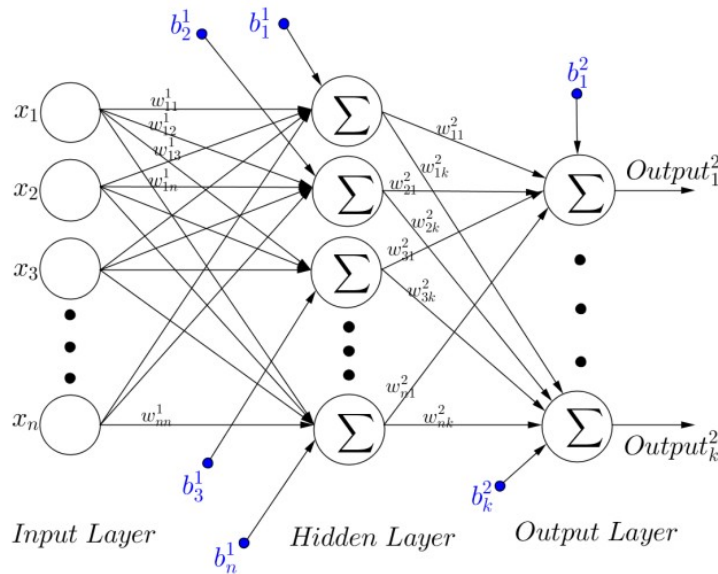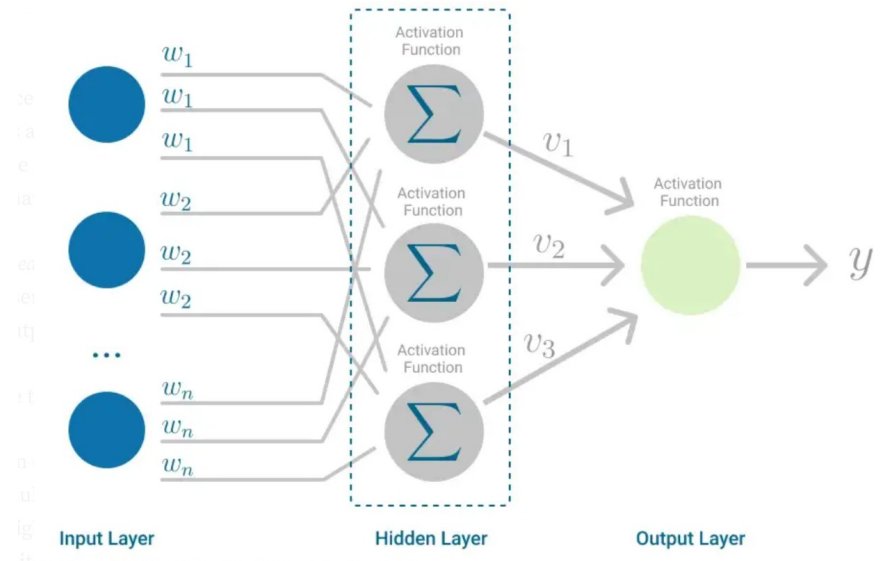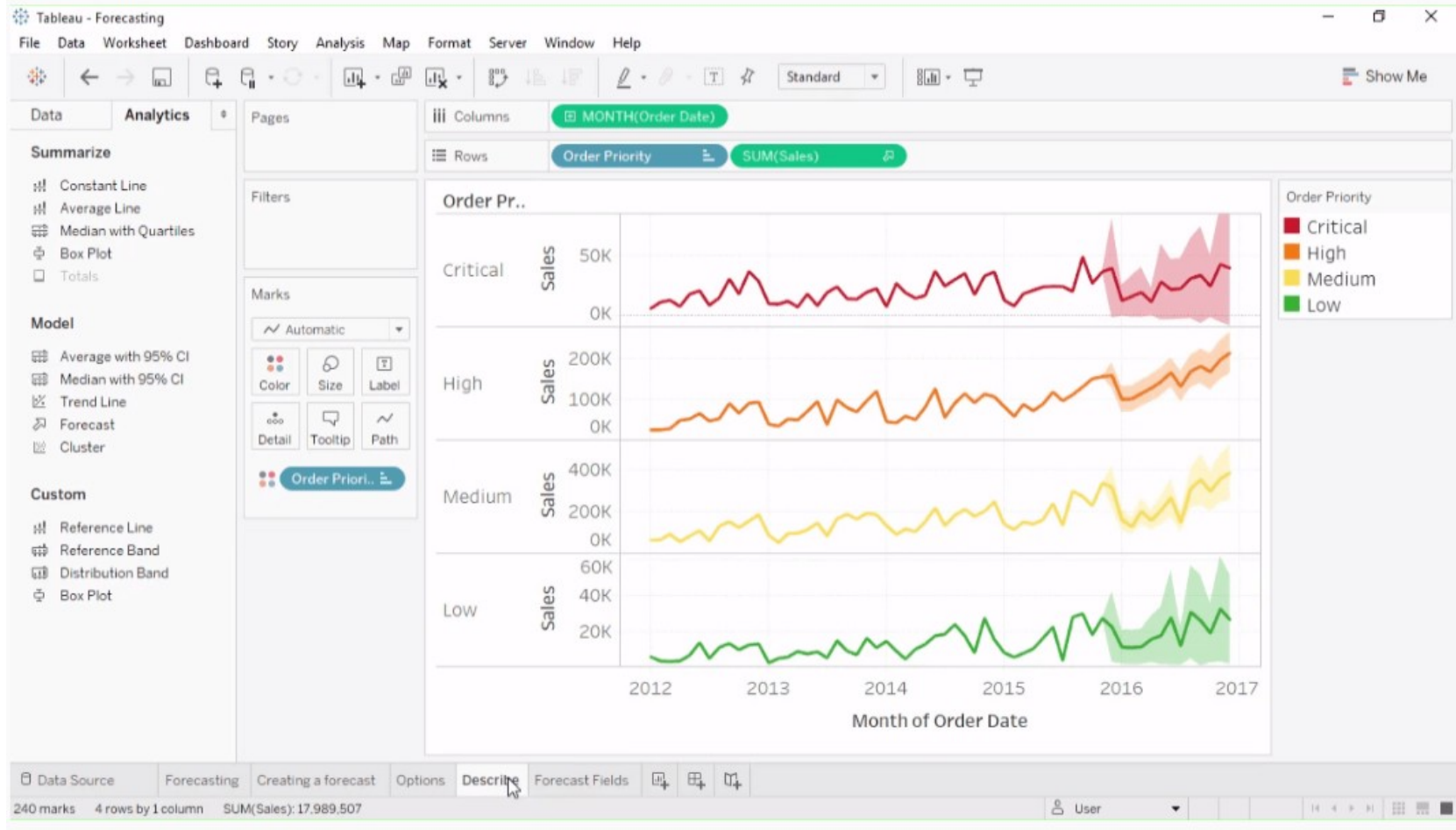

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Multi layer perception(MLP)
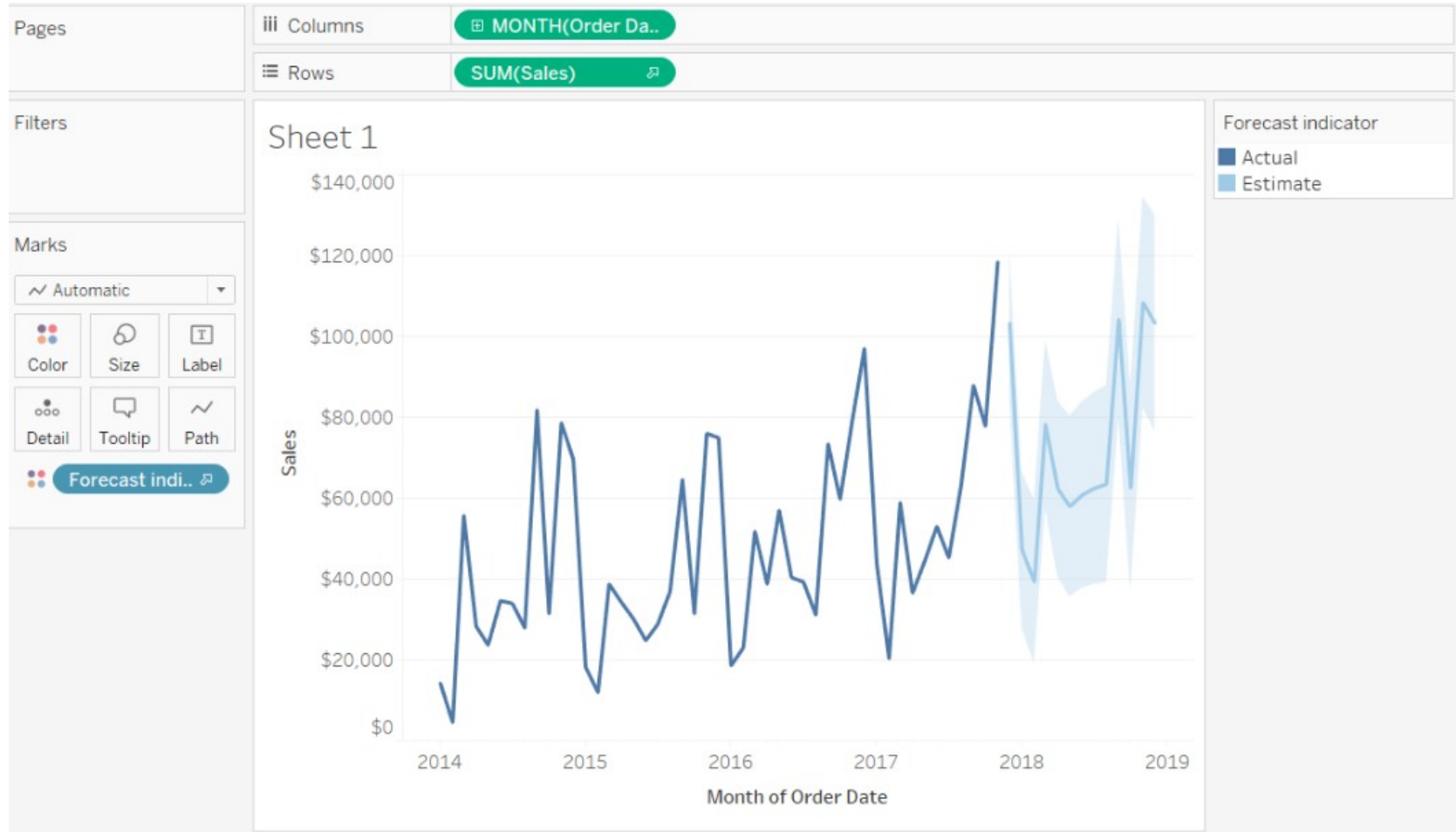

Figure 2.2: Multilayer neural network architecture

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Forecasting Processing using MLP

- Create the MLP network

- Training the MLP network

- Testing the MLP network

- Generate the prediction

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Time series forecasting

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Time series forecasting considerations

Time series forecasting considerations

- Amount of data

- Time Horizon

- Dynamic and static cases

- Data Quality

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Avaialable Technology For ML

- ML as cloud platform as service (Paas): Microsoft Azure, Amazon AWS, Google Cloud, IBM Bluemix.

- ML as service (SaaS): Dato, rapidminer, predictionIO.

- Deep Learning with GPU: Microsoft Azure, ErsatzLabs.

- ML for Investment Finance: Bloomberg, Quantopian, Dataminr, Kensho.

- ML Open source Tools: TensorFlow, SparkMLlib, Microsoft DMTK, SciKit.

- Top 10 forecasting solution according to CFOTechOutLook: 9Dots, Adaptive Insights, Arcplan, Axiom EPM, Centage, MRI Software, OneStream Software, Solver, Tidemark Systems, Xlerant.

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Current Machine Learning Technology Landscape

Pros of ML in Financial Forecasting

- Capacity to produce more accurate forecasts,Faster.

- Hedge between best and worst case scenario.

- Empowering value-Adding activities.

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Summary

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- What are the Basic components of Financial Forecasting?
- Importance of financial forecasting
- Some statistics of AI uses in Financial Forecasting
- What is ML and Why?
- Forecasting using machine learning
- Financial forecasting using Machine Learning
- How to implement it?
- Window method
- Multi layer perception(MLP)
- Forecasting Processing using MLP
- Time series forecasting
- Time series forecasting considerations
- Time series forecasting considerations
- Avaialable Technology For ML
- Pros of ML in Financial Forecasting

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