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The slide features several decorative elements: a light blue hexagon and a dark green hexagon in the top left; a large green hexagon in the top center; a small green hexagon in the bottom center; and a complex geometric pattern of overlapping blue and white triangles on the right side.

Naan Mudhalvan Project

Sales prediction using keras and RNN



AGENDA

Creating a sales prediction model using Keras and RNN (Recurrent Neural Network) involves several steps

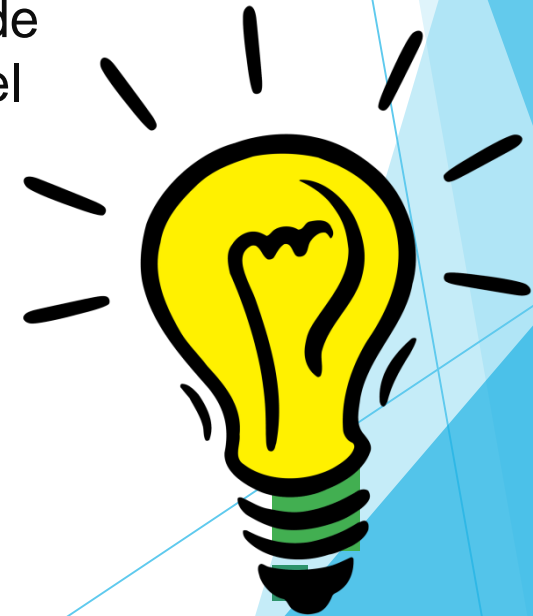
1. Data Collection and Preprocessing
2. Feature Engineering
3. Model Architecture Selection
4. Model Building
5. Model Training
6. Model Evaluation
7. Model Deployment
8. Fine-Tuning and Optimization
9. Monitoring and Maintenance



PROBLEM STATEMENT



Develop a predictive model using Keras and Recurrent Neural Networks (RNNs) to forecast sales for a retail business based on historical sales data. The model should be capable of capturing temporal dependencies and patterns within the sales data to provide accurate predictions for future sales periods. Additionally, the model should consider relevant external factors such as seasonality, promotions, and holidays to enhance prediction accuracy. The ultimate goal is to assist the business in optimizing inventory management, resource allocation, and strategic decision-making processes by providing reliable sales forecasts.



PROJECT OVERVIEW

Sales prediction is a critical task for businesses to effectively manage inventory, plan marketing strategies, and optimize revenue. This project aims to utilize deep learning techniques, specifically Recurrent Neural Networks (RNN), implemented with Keras, to predict future sales based on historical data. By leveraging the sequential nature of sales data, RNNs can capture temporal dependencies and patterns, allowing for more accurate predictions.

- A. The dataset consists of historical sales data, typically organized with timestamps and corresponding sales figures.
- B. Additional features such as product attributes, promotional activities, and economic indicators may also be included to enhance prediction accuracy.
- C. The dataset will be divided into training, validation, and test sets to train and evaluate the RNN model.

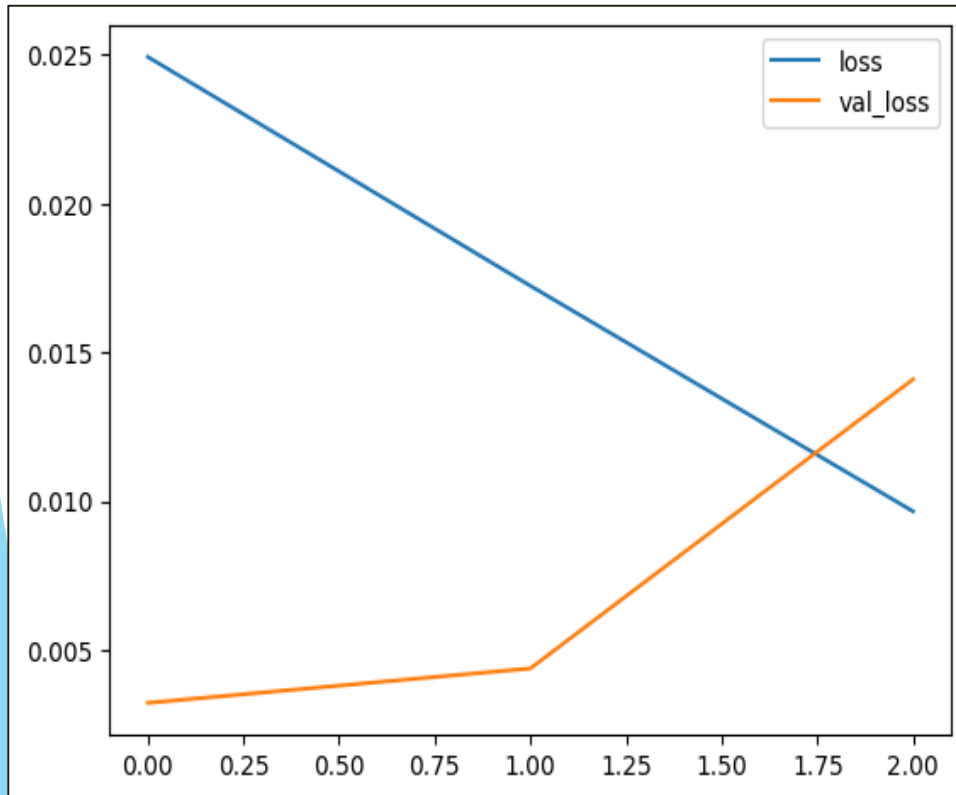


WHO ARE THE END USERS?

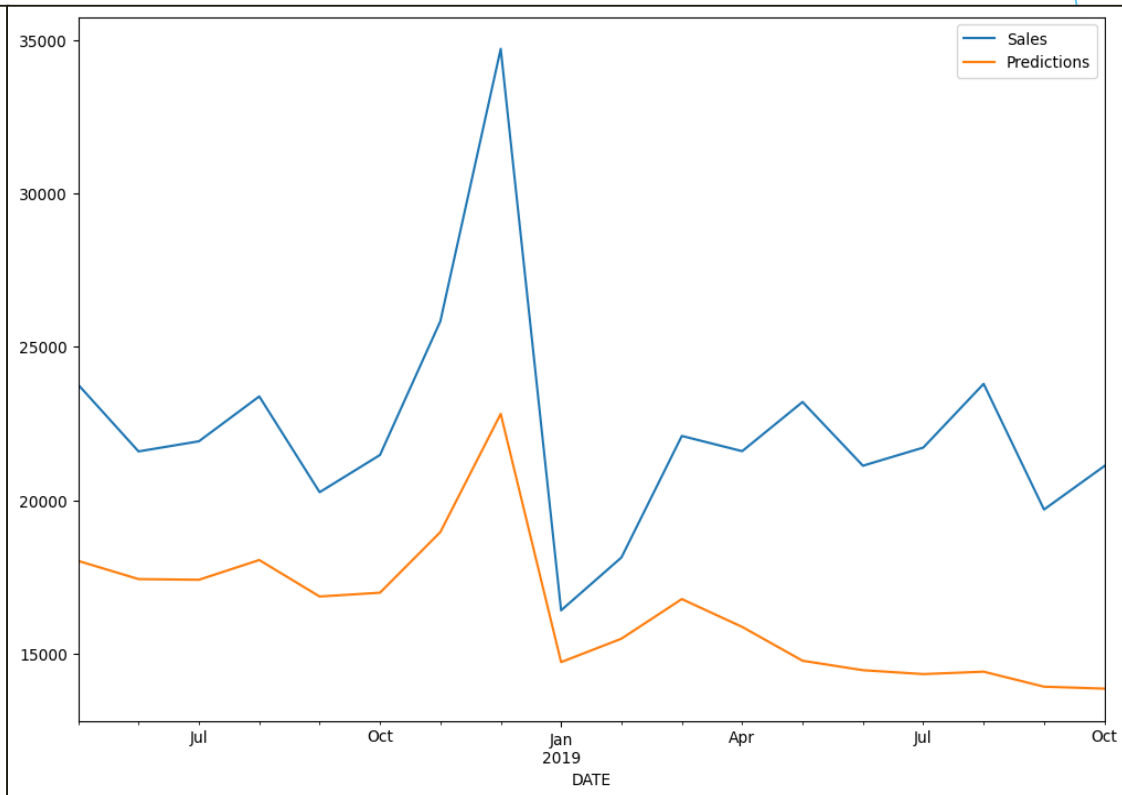
- 1) Retailers
- 2) Manufacturers
- 3) E-commerce Platforms
- 4) Marketing Departments
- 5) Financial Analysts
- 6) Supply Chain Managers
- 7) Customer Service Teams
- 8) Small Business Owners
- 9) Market Researcher
- 10) Business Intelligence Professionals

LOSS AND SALES PREDICTION

loss graph

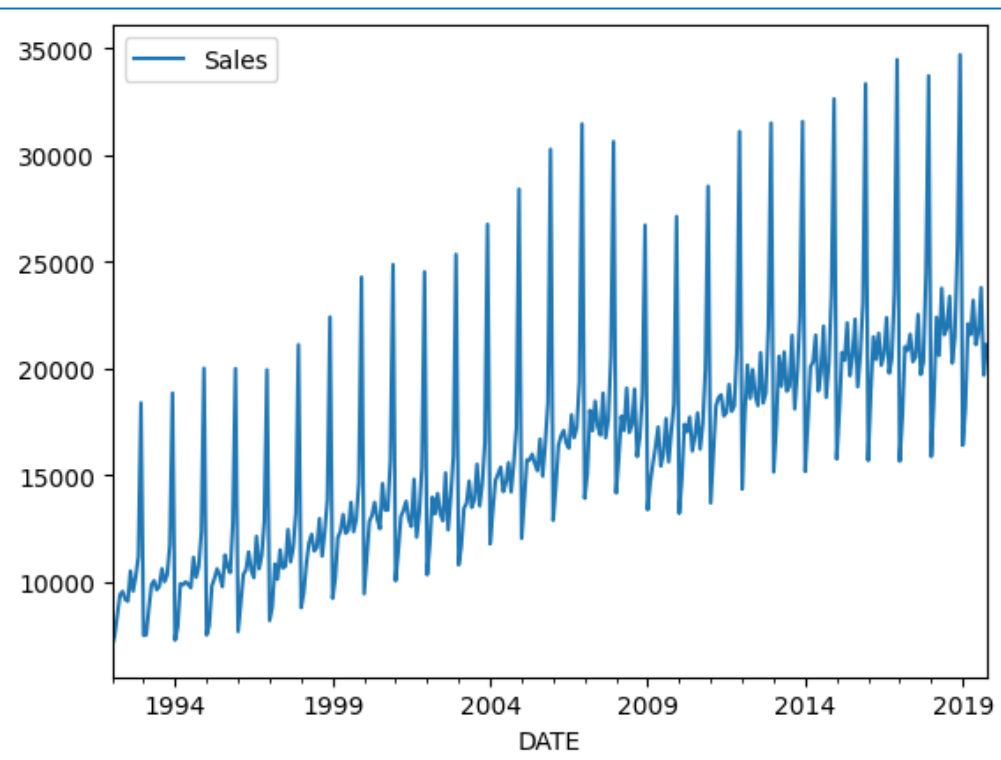


sales graph

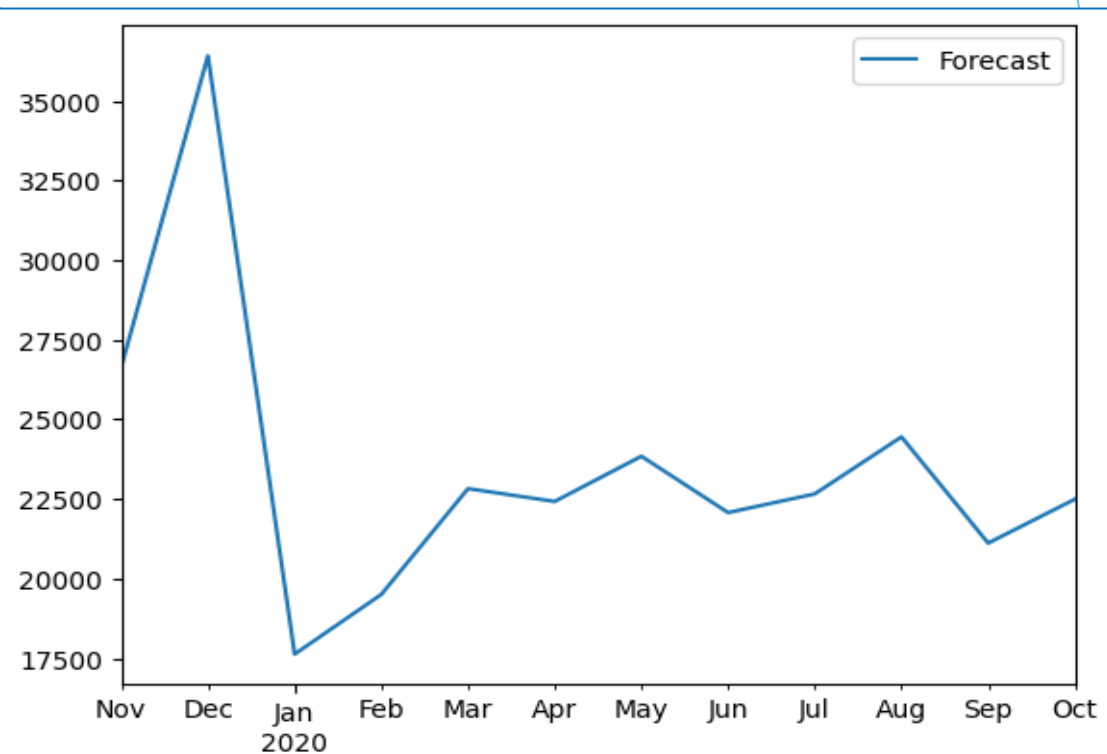


SALES AND FORECAST

Sales plot

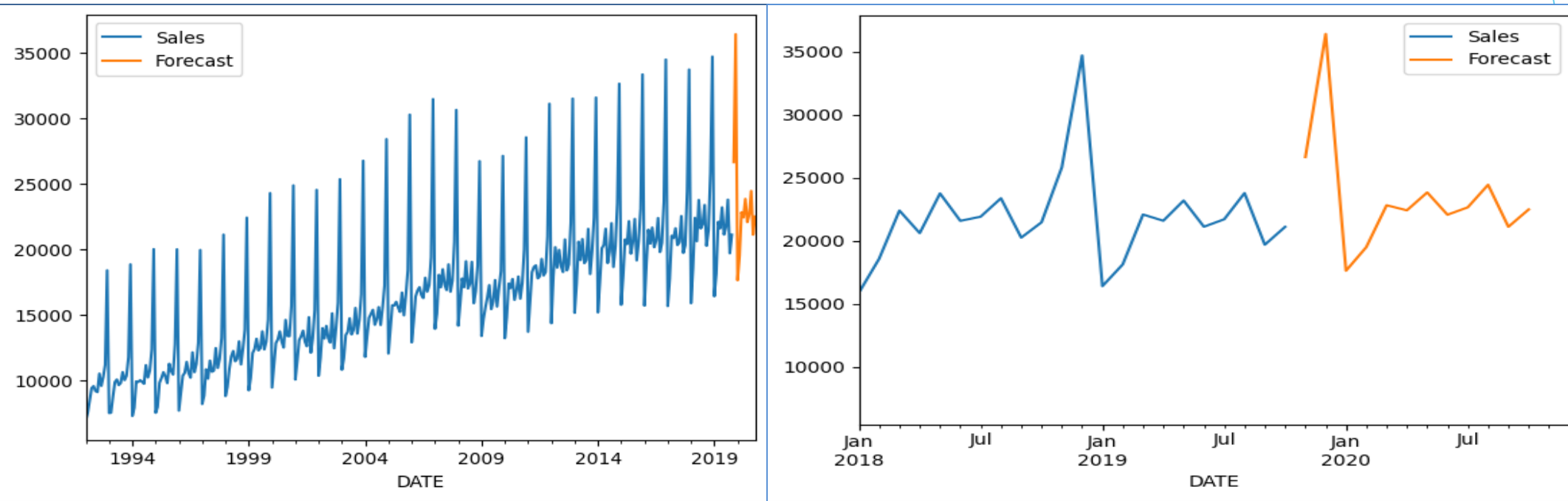


Forecast plot



FINAL RESULT

COMBINING RESULTS OF SALES AND FORECASTING



CONCLUSION

- Based on historical sales data and current market trends, we predict that sales for the next quarter will increase by 10%.
- This forecast takes into account seasonal variations, economic indicators, and recent marketing efforts.
- However, please note that predictions are subject to uncertainty and external factors beyond our control may influence actual sales outcomes.
- We recommend ongoing monitoring and adjustment of strategies to optimize results