



SNS College of Technology

Coimbatore - 35



23BAT615 – Artificial Intelligence for Managers

Unit V – Frameworks For Delivering AI Solutions



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Application of AI & ML in Marketing

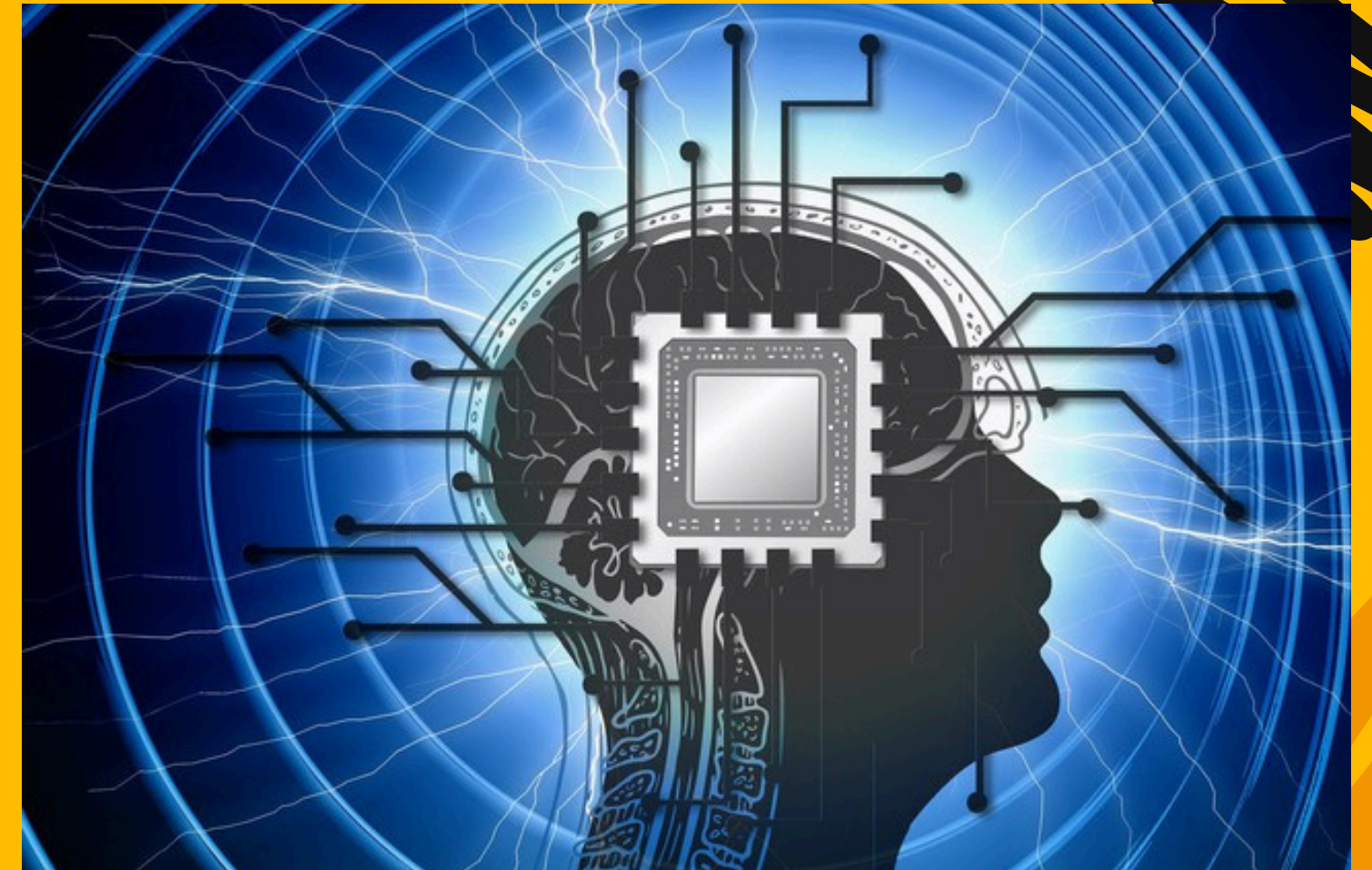
The infographic displays several key applications of AI and ML in marketing:

- Customer Segmentation and Target Marketing:** Represented by a laptop and a smartphone showing user profiles.
- Product Recommendation Engines:** Shown with interlocking gears and logos for brands like Nike, Adidas, and Myntra.
- Return Customers / Addressing Customers:** Illustrated with two female figures holding hands.
- Dynamic Pricing:** Includes a pair of sunglasses and a promotional offer: "Buy 2 Get 3 - Buy".
- Chatbots:** Depicted as a robot with a speech bubble containing the letters "AI".
- Live Chat:** Shown as a person climbing a bar chart, with a text box stating: "IDC survey says 83% companies use predictive LEAD SCORING".
- Sentiment Analysis / Personalised Customer Experience:** Represented by three faces with different expressions (happy, sad, neutral).
- Content Creation / Optimization / Deployment:** Illustrated with social media icons for Facebook, Email, YouTube, LinkedIn, and Twitter.



Recap

- Reason to study implementation and change management consideration
- Implementation of AI & ML in business
- Change management considerations in AI & ML in business





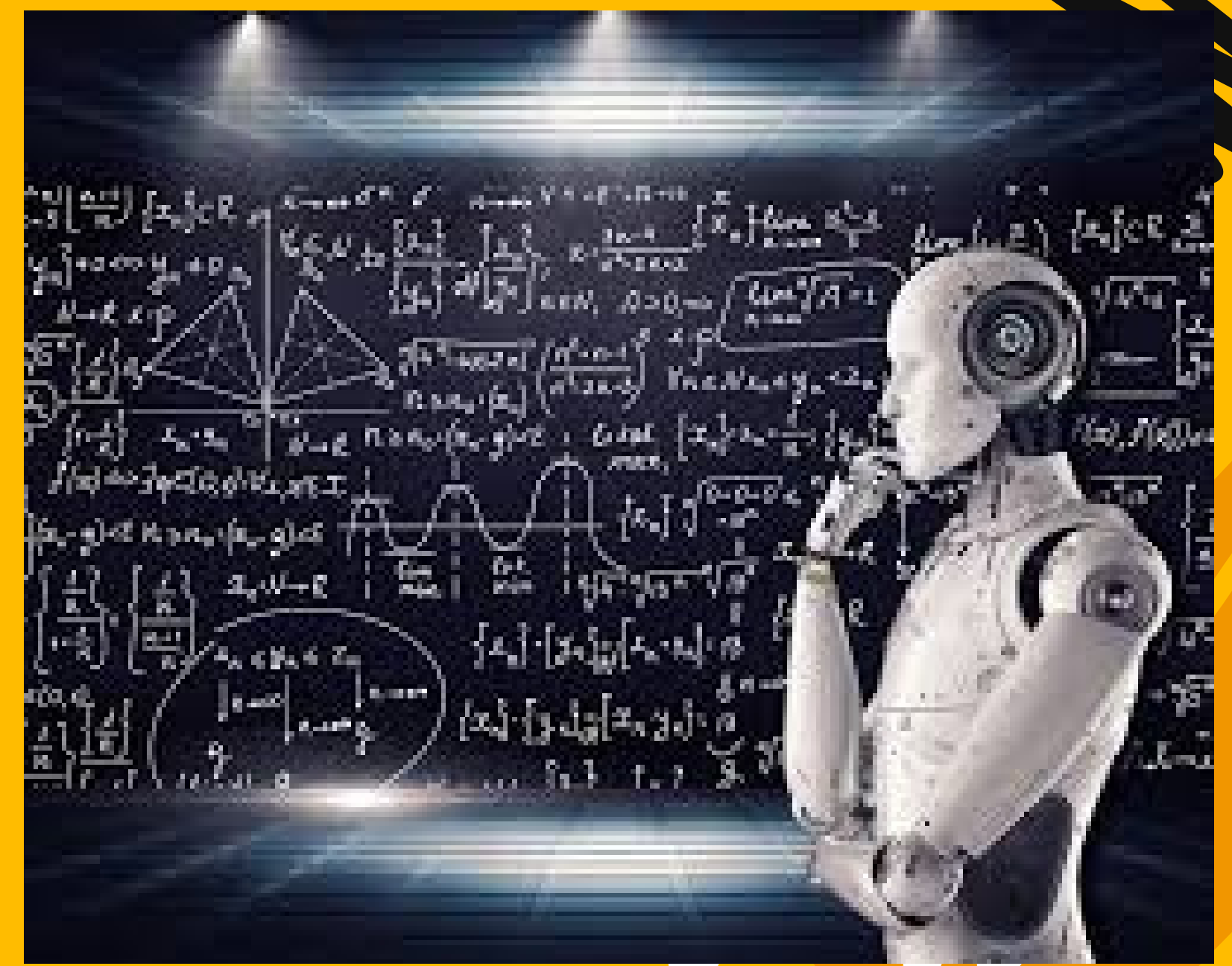
Discussion about....

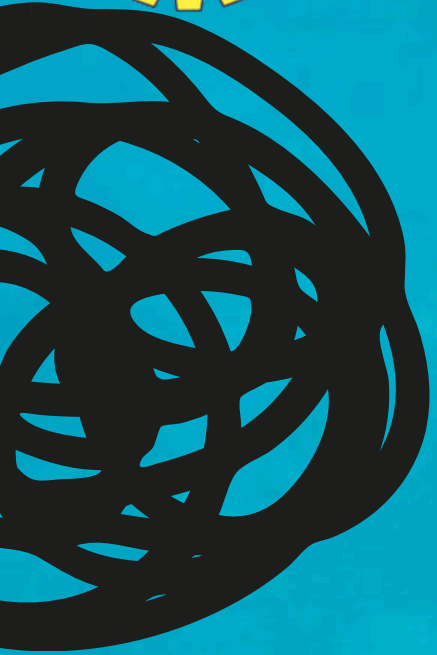


Reason to study AI & ML in Marketing

Current state of AI in Marketing

- Data Preprocessing Visualization
- Model Performance Visualization
- Feature Importance
- Model Interpretability
- Deployment and Monitoring



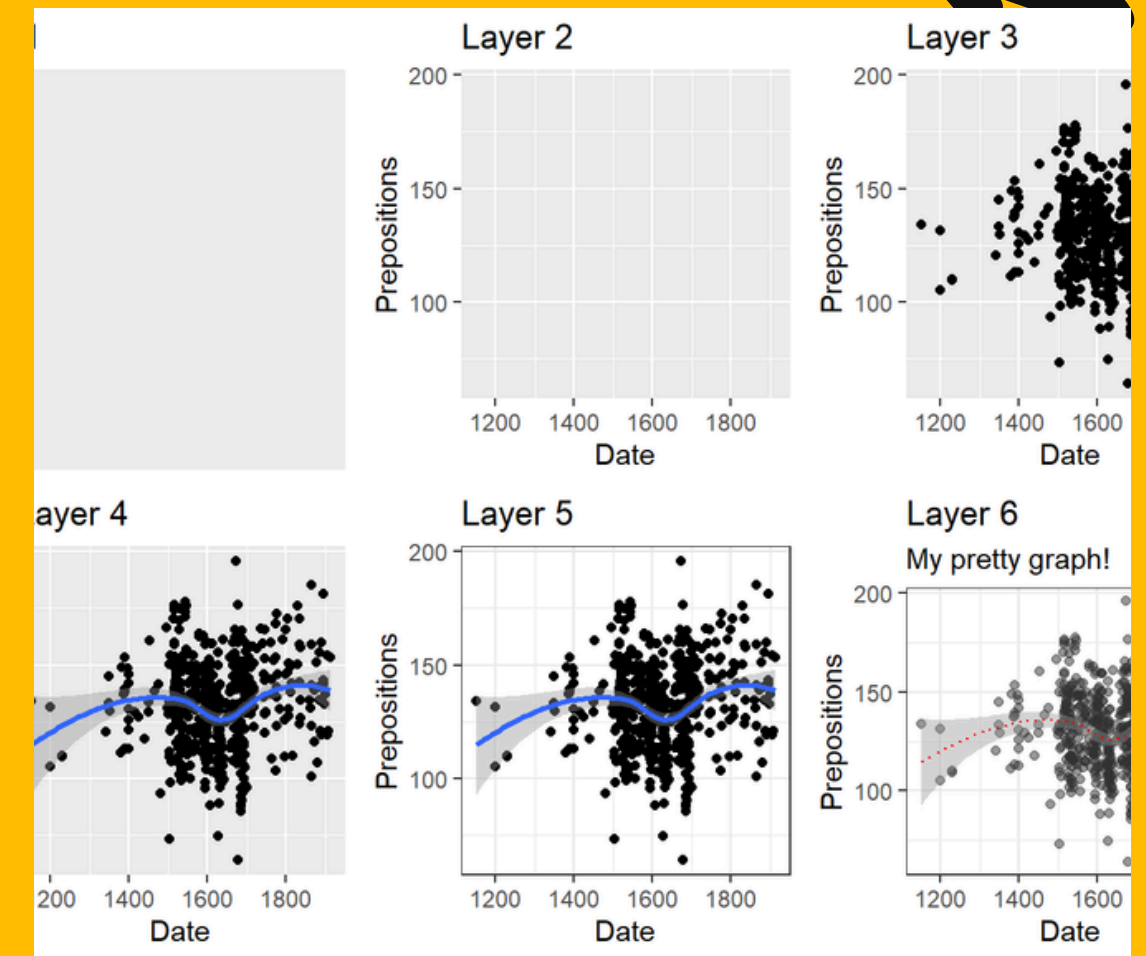




Data Preprocessing Visualization

Histograms and Density Plots: For understanding the distribution of features.

- Box Plots: To detect outliers and understand the spread of the data.
- Pair Plots: To observe relationships between features.

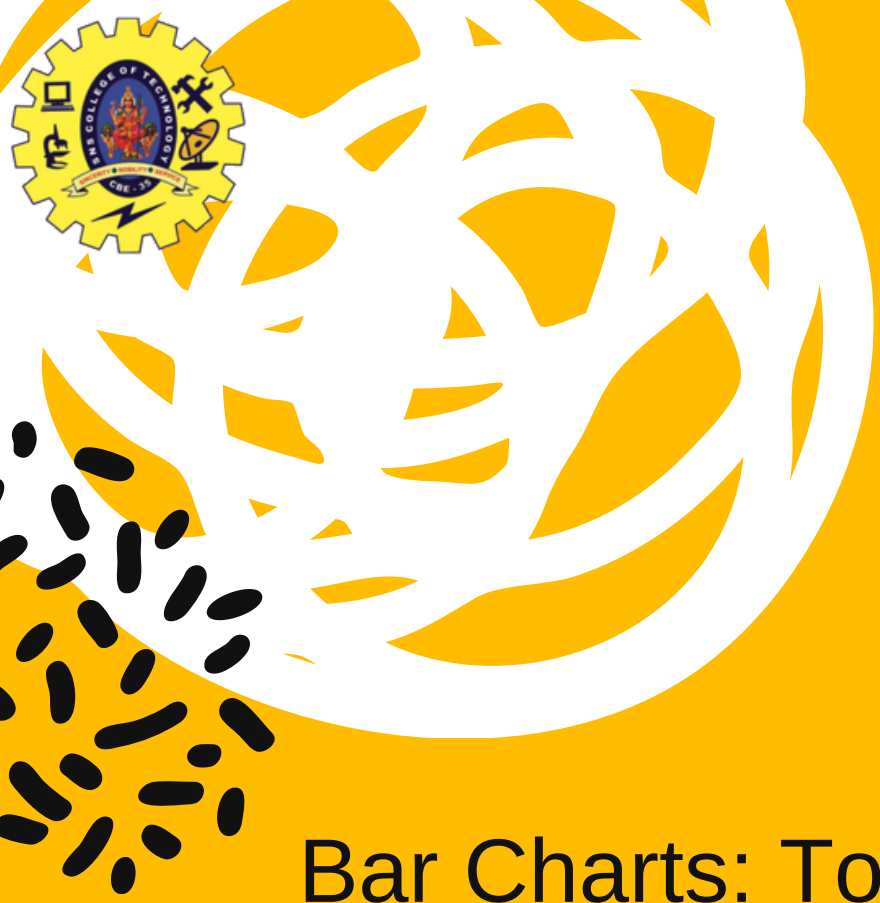




Model Performance Visualization

- *Confusion Matrix: For classification models to visualize true vs. predicted values.
- ROC and AUC Curves: To evaluate the performance of binary classifiers.
- Precision-Recall Curve: Useful for imbalanced datasets.

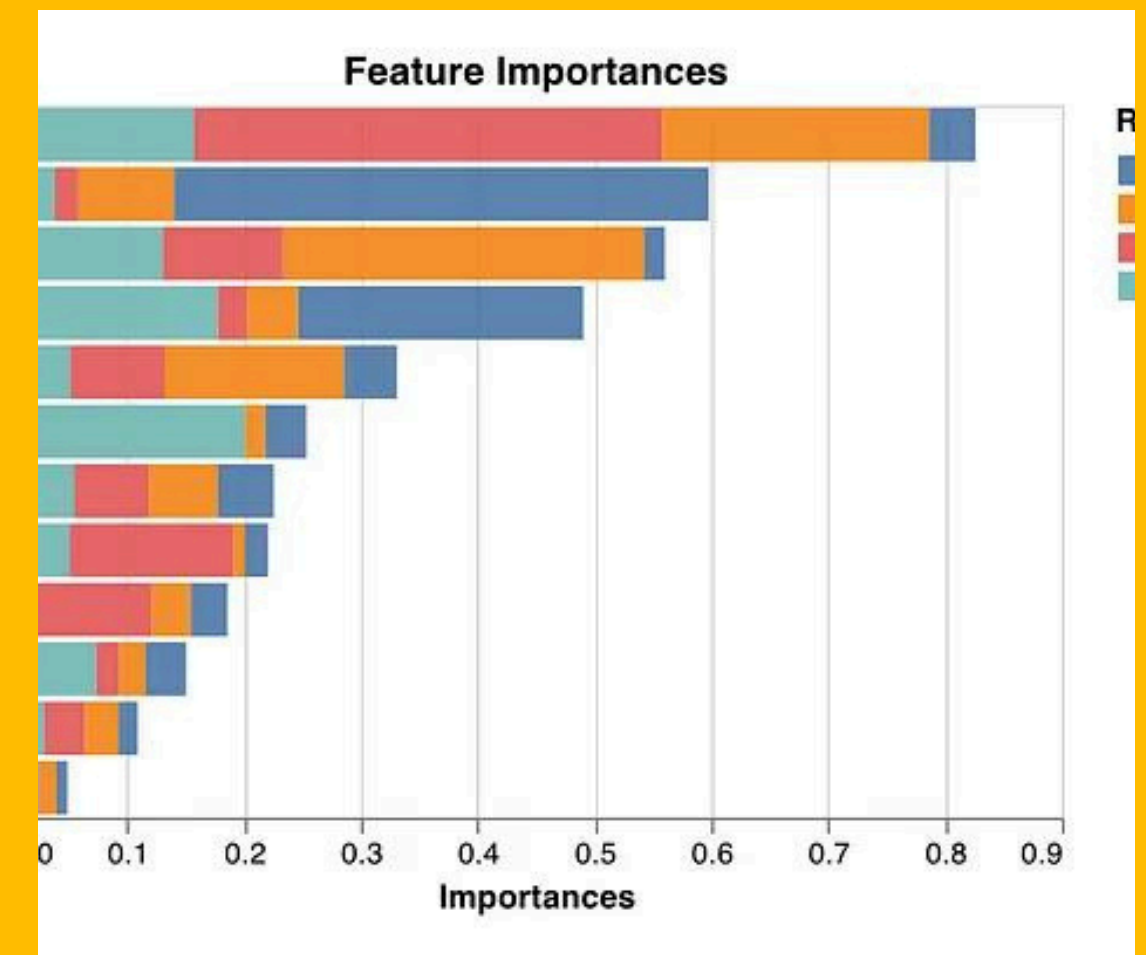




Feature Importance

Bar Charts: To show the importance of different features in the model.

- SHAP Values: For understanding the contribution of each feature to the predictions.
- Partial Dependence Plots: To illustrate the effect of a single feature on the predicted outcome.





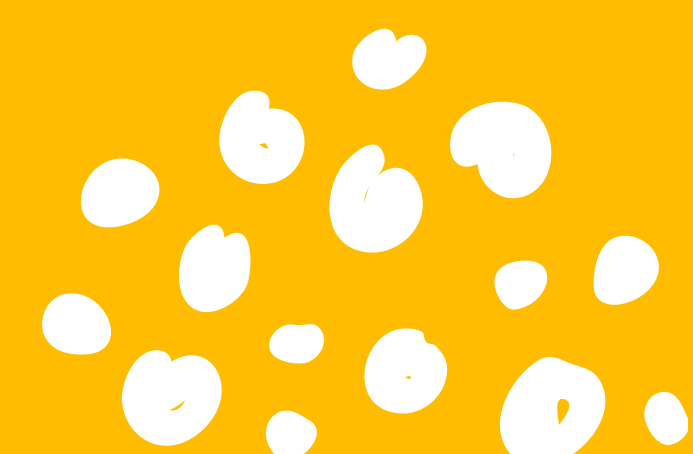
Model Interpretability

LIME (Local Interpretable Model-Agnostic Explanations)

To explain individual predictions.

SHAP (SHapley Additive exPlanations):

To provide global and local explanations for model predictions.

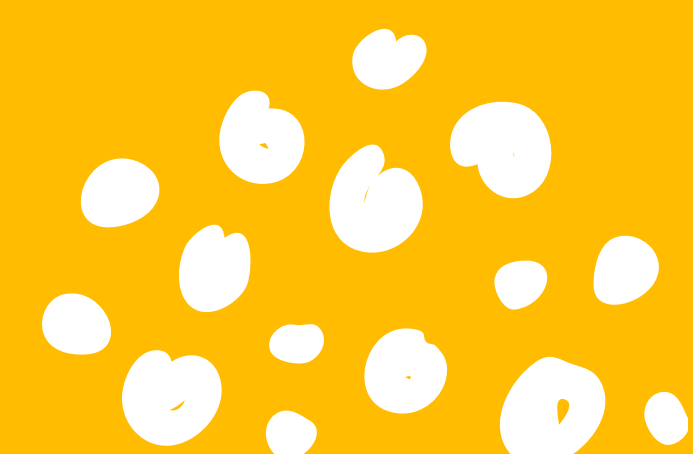




Model Training Visualization



- Learning Curves: To show how the model's performance improves over time.
- Validation Curves: To see how different hyperparameters affect model performance.





Deployment and Monitoring

Deployment and Monitoring

- Real-time Dashboards: For monitoring model performance in production.
- Error Analysis*: Using visual tools to understand where the model is making mistakes.

Dimensionality Reduction

- PCA (Principal Component Analysis) Plots: To visualize high-dimensional data.
- t-SNE (t-Distributed Stochastic Neighbor Embedding)*: For visualizing complex data structures.

Exploratory Data Analysis (EDA)

- Correlation Heatmaps: To show relationships between different features.
- Scatter Plots: For observing relationships between two variables.



Summary

- Reason to study AI & ML in Marketing
- Current state of AI in Marketing
- Data Preprocessing Visualization
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- Feature Importance
- Model Interpretability
- Deployment and Monitoring





References

- <https://www.salesforce.com/in/resources/guides/role-of-ai-in-marketing/#:~:text=Marketing%20Automation%3A%20AI%20is%20utilised,respond%20positively%20to%20marketing%20messages.>



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Thanks!

