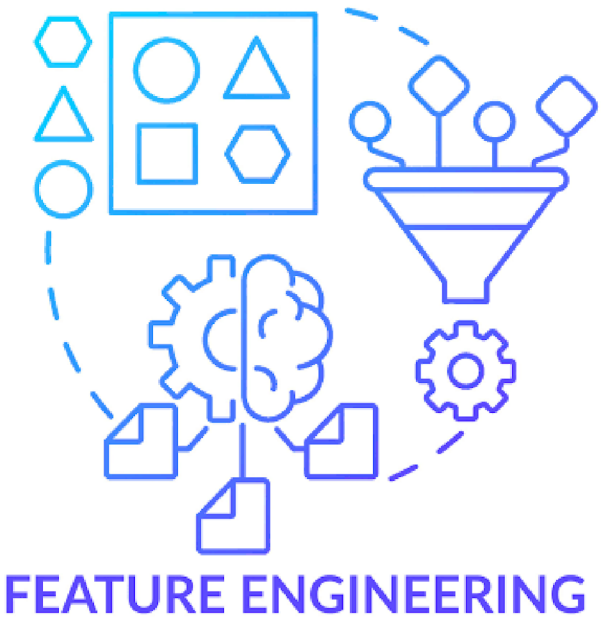
Day 1: Feature Engineering



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What is Feature Engineering

- Feature engineering is the process of extracting feature, creating/transforming features from raw data.
- In raw data features are not all useful. We need to extract useful features or create new features based on existing features to improve performance of predictive model.
- Predictive model needs relevant features. Providing irrelevant features adds the noise to the model which decreases the accuracy.
- It helps to address the issues like overfitting, underfitting and high dimensionality.
- There are many ways to perform feature engineering and one can go with the best suited method. It also requires domain knowledge.

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Steps In Feature Engineering

- Analysing the features and using useful features. This requires domain knowledge.
- Handling missing data.
- Handling outliers in features.
- Encoding categorical features.
- Creating new features from the existing features. For example combining two features to give new feature which contains more informatio or the combined information of both the features.
- Scaling features to the same range.

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Advantages of Feature Engineering

- Improves accuracy of predictive model by removing irrelevant features.
- Improves computational efficiency of the model.
- Helps to handle the curse of dimensionality.
- Improves model interpretability.
- Increases the robustness of model.

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