Using Machine Learning for Tenant Default Prediction

Machine learning models are increasingly used to predict tenant default risk in commercial real estate portfolios.

Typical data inputs used in such models include:

- Tenant financial statements
- Historical rent payment data
- Lease contract attributes
- Industry classification
- Macroeconomic indicators

Common machine learning techniques applied include:

1. **Logistic Regression**
    o Simple and interpretable
    o Useful for baseline risk scoring
2. **Decision Trees and Random Forests**
    o Capture non-linear relationships
    o Handle missing data effectively
3. **Gradient Boosting Models**
    o High predictive accuracy
    o Suitable for large datasets

Model outputs generally include:

- Probability of default
- Risk classification (Low / Medium / High)
- Early warning indicators

Benefits of ML-based tenant risk models:

- Early detection of financial stress
- Objective risk scoring
- Scalable analysis across portfolios

Such models are most effective when combined with expert judgment and continuous monitoring.