

DECISION SUMMARY: CREDIT RISK MODELLING

- **Final Model**
 - **Extreme Gradient Boosting (XGBoost) + SMOTE for class balancing**
 - **Best performance among all models tested**
 - **Model Performance**
 - **Precision: 99% (correctly identified defaulters)**
 - **Recall: 90% (captured most defaulters)**
 - **F1 Score: High, balanced precision and recall**
 - **Top Features (SHAP)**
 - **monthly_income**
 - **age**
 - **product_price**
- Key Steps Taken**
- **Removed data leakage columns: leak_col_good, leak_col_subtle**
 - **Handled class imbalance using SMOTE**
- Recommendation: Deploy final model for credit scoring**