Title : Application of Artificial Intelligence for Applicant Analysis

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Type of presentation :

- ☐ **Oral Presentation**
- ☐ **Poster**
- ☑ **Cooperative Education**

ABSTRACT

This study aims to develop and compare the performance of classification models for job applicant grouping and to identify the most suitable model for this task. The analysis is conducted using a dataset comprising 14,775 employees from a private company. The classification models evaluated in this study include Random Forest, XGBoost, LightGBM, and CatBoost. To address the issue of class imbalance in the dataset, three resampling techniques—over-sampling, under-sampling, and the Synthetic Minority Over-sampling Technique (SMOTE)—are applied during model development. Model performance is evaluated using a confusion matrix, with accuracy, precision, recall, and F1-score as the primary evaluation metrics. The results indicate that LightGBM outperforms the other models, achieving an accuracy of 0.9082, a precision of 0.9095, a recall of 0.9082, and an F1-score of 0.9078.