**Abstract:**

This project develops a machine learning-based resume screening system designed to assist recruiters in automating candidate selection. The model leverages a combination of structured candidate features (e.g., experience, education, certifications) and unstructured textual data from skills using TF-IDF vectorization. A Random Forest classifier is trained to predict recruiter decisions (Hire or Reject). To study model behaviour and baseline comparison, a simplified Random Forest model and a Dummy classifier were also evaluated. The simpler model achieved accuracy closer to the baseline but suffered from imbalanced predictions, highlighting challenges in minority class detection. This work illustrates the trade-offs between model complexity, accuracy, and interpretability in resume screening tasks and underscores the importance of evaluating models against realistic baselines.