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ANALYZING SEASONAL ATTENDANCE TRENDS AND SOCIO-DEMOGRAPHIC FACTORS IN STUDENT PERFORMANCE

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INTRODUCTION

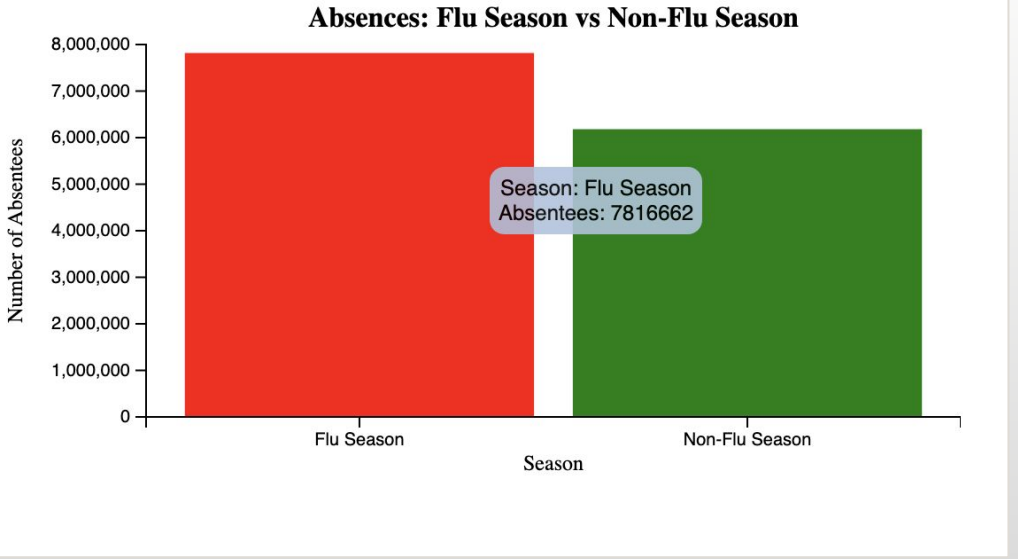
- Analyzing seasonal trends in student attendance and assessing the influence of socio-economic factors on student performance

DATA SET: DAILY ATTENDANCE TRENDS

- DAILY LISTING OF STUDENTS REGISTERED, PRESENT, ABSENT, AND RELEASED BY SCHOOL DBN

SEASONAL ABSENTEEISM

FLU SEASON IMPACT



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KEY FINDINGS: ATTENDANCE

SPRING: HIGHEST ABSENTEEISM

FLU SEASON: SIGNIFICANT IMPACT

SOCIO-ECONOMIC FACTORS

FAMILY INCOME, PARENTAL EDUCATION, ACCESS TO RESOURCES, NEIGHBORHOOD ENVIRONMENTS

DATA PREPROCESSING

REDUCED FROM 30 TO 15 ESSENTIAL ATTRIBUTES

LOGISTIC REGRESSION INSIGHTS

GUARDIAN TYPE, STUDY TIME, INTERNET ACCESS IMPACT PERFORMANCE

RANDOM TREE ANALYSIS

STUDY TIME, FAMILY DYNAMICS, ALCOHOL CONSUMPTION PATTERNS INFLUENCE OUTCOMES

RANDOM FOREST RESULTS

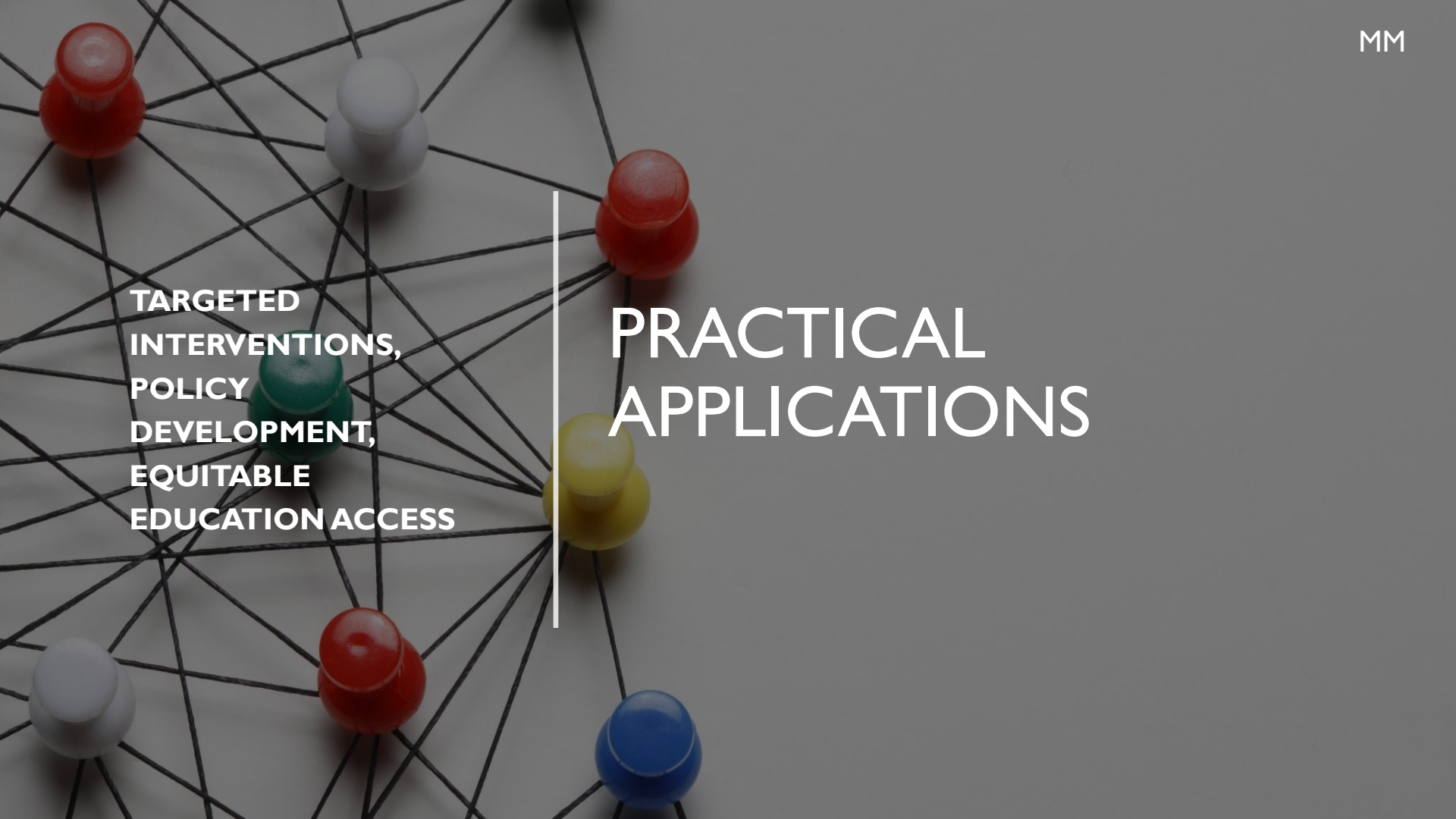
81.82% ACCURACY, 95.4% RECALL FOR 'PASS' CLASS

STRUGGLES WITH IDENTIFYING STUDENTS AT RISK OF FAILING

MODEL LIMITATIONS

FUTURE WORK

ADDRESS CLASS IMBALANCE, INCORPORATE MENTAL HEALTH FACTORS



PRACTICAL APPLICATIONS

TARGETED INTERVENTIONS, POLICY DEVELOPMENT, EQUITABLE EDUCATION ACCESS

THANK YOU!