

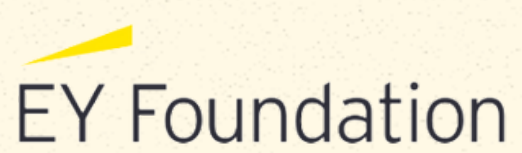
Predicting Students at Risk of Becoming NEET (Not in Education, Employment or Training)



PARTNERS



A unitary local authority helping communities receive support and skills needed to live independent, happy and fulfilling lives



An independent charity supporting young people from low-income backgrounds tackle barriers to employment

PROBLEM

- Students with NEET destinations for 2018-2020 were above **2%** and Unknown destinations were above **5%**
- Students at risk of becoming NEET are prone to poor quality of life and mental health issues

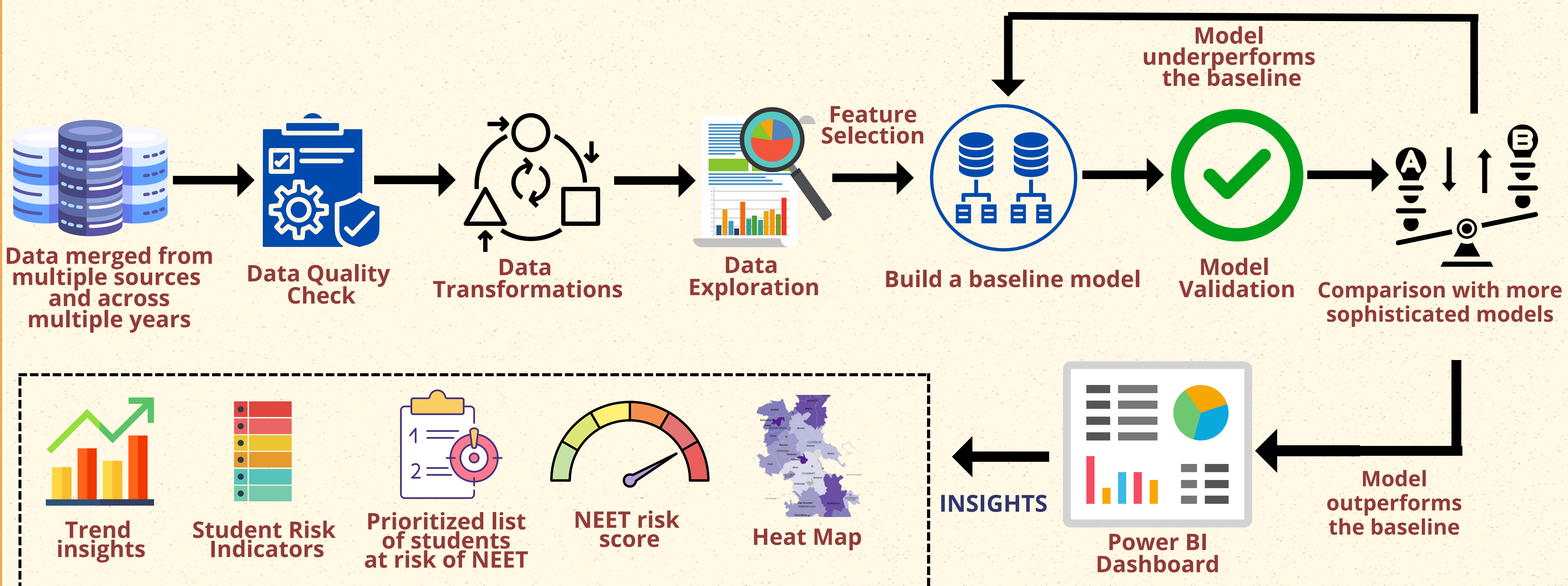
OBJECTIVE

- Predict students at risk of becoming NEET and outperform an existing rule-based tool (RONI- Risk of NEET Indicator)
- Prioritize students for receiving specific support through intervention programs
- Identify which students with Unknown status are likely to be NEET

MODELS

- We built various models. The best was Gradient Boosted Trees which achieved an **F2 score of 0.48**
- The model classifies whether students are at high risk of becoming NEET or not, and classifies students with Unknown status that are likely to be NEET
- Identifies **111** (out of 167) True Positives and **5844** (out of 6231) True Negatives

SOLUTION WORKFLOW



INSIGHTS

- A student's Level Of Need (Medium support requirement as identified by case workers) was found to be the most important feature for predicting NEET risk
- Free School Meals were surprisingly not a good predictor for identifying student's risk of becoming NEET
- Students with Unknown status show similar characteristics (eg: Attainment 8 scores, Income Deprivation Index) as the NEETs

IMPACT

- Our model **flags 51% fewer false positives than the RONI tool**, when matching the RONI tool's false negative rate
- Adjusting the threshold to flag same number of students as RONI, **our model flags 20 (out of 167) more NEET students**
- Using this tool will allow the council to target resources more efficiently for students as per their identified risk
- Tool adoption by other local authorities could help bring down the NEET % nationally