ABSTRACT:
With the advent of the General Data Protection Regulation, and upon advice from UK regulators including the Information Commissioner’s Office, there is an increasing expectation on financial institutions utilizing consumer data for credit risk modeling to explain how automated systems make decisions. However, explanations of credit risk models do not necessarily translate into the ordered sequence of actions a consumer could take to improve their score to a desired value. Further, the use of machine learning models complicates transforming model explanations into actionable consumer behavior due to the inherent nonlinearity and interactions present in these models. In this work, we describe a method for constructing an optimal path that explicitly navigates an individual consumer through the model feature space from their current score to a score of their choosing. Our methodology automatically generates the ordered actions a consumer could take to incrementally reach their desired score.