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Actuarial Formula Predictor

Abstract

Artificial Intelligence(AI) is proving to be an increasing formative part of human experience of the 21s t century. Whilst the industrial Actuarial applications of AI are beginning to take traction, there is vast untapped potential for AI in the field of actuarial education. The aim of this project is to build a program, which when given a certain actuarial question, the formula used in the question, and a wrong response, is able determine possible erroneous applications of the given formula used by the responder. A prototype of the program has already been developed. This program currently reads a user input and the associated formula and identifies all variables and constants in the given formula. These variables are then permuted into an array of possible wrong values. These values are then put back into the original formula to calculate and assess the proximity of the resulting output to the original user input. All permuted equations resulting from this selection are output to the user as possible equations that could have resulted in their wrong response. The next identified upgrade is imbuing this program with the capability to build profiles of users to further accurately prognosticate erroneous formulae.