

TITLE: Discrimination-free insurance by eliminating sensitivities

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Making insurance premia fair and discrimination-free is a very important and challenging problem in actuarial practice that has been further exacerbated with the raise of complex machine learning models. In many countries, insurance regulation prohibits the use of protected covariates, such as sex, nationality, or disclosure of genetic tests, for calculating insurance premia. This project proposes a new discrimination-free insurance premia by deriving a so-called pricing measure. The student will be working with Prof. Pesenti and one of her PhD students who is the key player of this project. The student will be responsible to conduct a case study in R of the new discrimination-free premia and other proposed premia in the literature. Specifically, the student will implement the different premia on a real insurance dataset, analyse the outcome, their implication, and connection of the various suggested premia.