

Séance 52

Fairness and Risk: An Ethical Argument for a Group Fairness Definition Insurers Can Use

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Présentation

Algorithmic predictions are promising for insurance companies to develop personalized risk models for determining premiums. In this context, issues of fairness, discrimination, and social injustice might arise: Algorithms for estimating the risk based on personal data may be biased towards specific social groups, leading to systematic disadvantages for those groups. Personalized premiums may thus lead to discrimination and social injustice. It is well known from many application fields that such biases occur frequently and naturally when prediction models are applied to people unless special efforts are made to avoid them. Insurance is no exception. In this paper, we provide a thorough analysis of algorithmic fairness in the case of insurance premiums. We ask what “fairness” might mean in this context and how the fairness of a premium system can be measured. For this, we apply the established fairness frameworks of the fair machine learning literature to the case of insurance premiums and show which of the existing fairness criteria can be applied to assess the fairness of insurance premiums. We argue that two of the often-discussed group fairness criteria, *independence* (also called *statistical parity* or *demographic parity*) and *separation* (also known as *equalized odds*), are not normatively appropriate for insurance premiums. Instead, we propose the *sufficiency* criterion (also known as *well calibration*) as a morally defensible alternative that allows us to test for systematic biases in premiums towards certain groups based on the risk they bring to the pool. In addition, we clarify the connection between group fairness and different degrees of personalization. Our findings enable insurers to assess the fairness properties of their risk models, helping them avoid reputation damage resulting from potentially unfair and discriminatory premium systems.

Intervenants :

Joachim Baumann (he/him) is pursuing a PhD in computer science at the University of Zurich's Social Computing Group and the University of Applied Sciences Zurich (currently visiting the Max Planck Institute for Intelligent Systems Tübingen). He broadly focuses on the ethical aspects of machine learning-based decision making systems. His research centers around addressing bias and unfairness in AI, data science for social good, and collective action.

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La chaire PARI (programme sur l'appréhension des risques et des incertitudes), portée par l'ENSAE et Sciences Po, a pour objectif d'identifier et comprendre (i) le champ de pertinence de nos outils d'appréhension des risques, et (ii) leurs conditions d'émergence et d'utilisation. Créée début 2015, elle organise un séminaire de recherche mensuel de 2h pour présenter et échanger autour de ses travaux et des thématiques connexes. Le deuxième cycle de la chaire porte sur les enjeux du big data pour l'assurance.