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Part 2: Wearable health-technologies and private health insurance

How can the training pipeline affect the predictions of Vivaksa's health status prediction algorithm when deployed on the general public?

Since Vivaka's training data consists of only it's employees it might not be an accurate representation of the general public and thus there's might be sampling bias. Also it seems like the training has been done on the data retrieved by Apple watches so there's another sampling bias and the prediction might not good on the data retrieved from other watches. Also we must take into look of whether blood and saliva test is a good enough marker for health and stress. Finally, the trail is only held for a month and there is a bias since prediction is being done all through the year.

Can Vivaksa improve their predictions? if so how? and if not, why?

Yes, they can by ensuring that the training data is an accurate representation of the general public and weighting the data based that. Also add to the dataset data from many different types of watches (if possible all types in the market). Improve the health marker by identifier better ones that indicate health/stress and also ensure that long term trails have been held to better judge the health of an individual as opposed just a month.

Can the roll-out of this pilot program undermine the insurance company's own value of fairness? – explain why or why not.

Yes, this roll-out undermines fairness. Firstly, it prejudices against people who don't own smart watches. Also an "unhealthy" person is treated different from a healthy one and being forced to pay more for insurance which undermines fairness.

Part 3: AI-enabled human personality prediction

What are the limitations of Selfie2Personalitys technology - if any?

Firstly, it has been discussed in the reading material that the paper of predicting criminality is not perfect and it seemed to select criminality based on where the picture has the person smiling or not. Thus, this might faultily predict criminality for people that don't like to smile in picture or are conscious about their smile. Also the data seems to come entirely from social media and social media might be an accurate reflection of the person. People tend to post stuff on social media that is usually complementary about them so it might be predicting higher education/income level based on social media posts.

Are there any ethical and privacy concerns with this collaboration and how may they manifest?

Firstly, there is the privacy concern of whether users of the app realize that their data is being stored, profiled and shared. Secondly, this raises the ethical question of whether someone's social media posts can be considered enough ground for suspicion of a crime. The justice system works in the principle of "innocent unless proven guilty" whereas with this we are assigning guilt first and trying to find proof of guilt. Thus the police officers might not be treating every individual equally and fairly. As discussed earlier, it also prejudices against user who don't tend to smile in their pictures which is not really a marker for criminality.