DETECTING SMARTPHONE INSURANCE FRAUD

The nature of smartphone insurance fraud has until now remained largely unexplored, even though smartphones are among the most ubiquitous possessions of modern consumers. The findings of a recent study provide new insights and support for smartphone insurance fraud detection.

90 % of Swedes are in possession of a smartphone, a device which is typically covered via one's household insurance. The insurance start-up Hedvig report that ~50 % of all insurance claims processed involve smartphones, absorbing a significant amount of time and resources. Experts report ~40 % of all smartphone claims are fraudulent and call for sophisticated and efficient detection approaches to be developed. 51 smartphone insurance fraud indicators have recently been compiled in a study conducted at Lund University. The indicators can support insurance companies in their fraud detection efforts and can either be used manually or as input variables to automated detection systems. A triangulation methodology was employed in the study, which included a literature review, interviews with practitioners, and attendance at international conferences. The following paragraphs goes through some noteworthy findings from the study.

NUMBER OF PREVIOUS CLAIMS

In a study where ~30 000 fraudulent home insurance claims were analyzed it was concluded that that 90 % were made by claimants who had only made 0-1 claims previously. However, having made many previous claims is one of the most trusted indicators of fraud used by practitioners. Consequently, too much emphasis on frequent claimers could mean that many fraudulent claims are overlooked. Many practitioners are aware that most smartphone frauds are committed by ordinary people, but still use the number of claims as the number one indicator because it is very easy to observe and communicate. The number of claims is not a bad fraud indicator per se but is only helpful to detect a small minority of fraudulent smartphone claims.

SEASONALITY

It is widely known within the insurance industry that smartphone claims tend to increase in connection to the release of new iPhone models. The underlying cause of these peaks is believed to be so-called "upgrading claims" – policy holders who want the latest smartphone model and try to make their insurer pay for it. This has had several counter responses from the insurers, such as providing the claimant with a new device of the same model that was reported in the claim, instead of paying out cash. Another approach is to inform the claimant that the company has recently noticed a surprising increase in claims and is currently on the lookout for fraudsters. Perhaps due to efforts like these, several companies report a decline in this kind of fraud in past years, and state that the most notable claim peaks are currently concentrated around holidays, when many people are typically low on cash.

DIGITAL FOOTPRINT

More indicators can be obtained by examining the digital footprint of the person making the smartphone claim. For example, a person with 200+ contacts on LinkedIn, a 5+ years old G-mail address and a Facebook or Twitter account, is allegedly very unlikely to commit fraud. Social media activity can also be analysed to verify the story of the claimant. Using network analysis, connections between objects and customers can be discovered, enabling the detection of organized fraudsters and devices which have repeatedly been used for insurance fraud.

AREAS OF IMPROVEMENT

Industry collaboration on data analysis and allowing researchers to examine data from several companies would increase the understanding of the fraudster profile. Furthermore, incorporating unstructured data from documents, tonality in text claims and voice claims, in combination with employing AI-technology could potentially enhance the ability to detect fraudulent behaviour patterns greatly. Lastly, updating legacy systems and standardizing the data acquisition would allow for the insurer to make use of all currently held data.

Authors: Björn Angtoft and Olof Hallqvist
Division of Innovation Engineering
Department of Design Sciences
Faculty of Engineering LTH
Lund University 2019