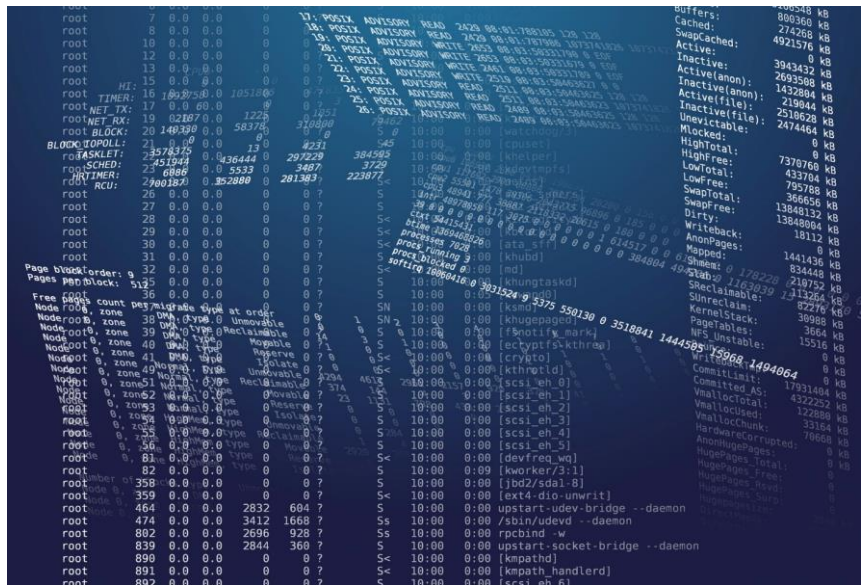**FFG**
Promoting Innovation.

SCCH
Software Competence Center
Hagenberg

Programme: COMET – Competence Centers for Excellent Technologies

Programme line: COMET-Centre K1

Type of project:
SmartDD (Smart Data Discovery)
2019 - 2022, multi-firm

Source Fotolia: Pattern recognition in large amounts of data

DATA ANALYTICS SUPPORTS SOCIAL FRAUD PREVENTON

INTELLIGENT ALGORITHMS RECOGNIZE PATTERNS IN LARGE AMOUNTS OF DATA

Intelligent algorithms can quickly and reliably identify patterns - and thus conspicuous features - in large volumes of data. This can also be successfully used to combat social fraud, as a project of SCCH with ÖGK shows. Insurance fraud is expensive for an economy. In 2015, therefore, the Social Fraud Prevention Act was enacted in Austria to protect health insurance providers from abuse, among other things. Together with the competence center RAD (risk and conspicuity analysis in the employer sector) and the Austrian Health Insurance Fund (ÖGK), SCCH developed an automated suggestion tool for suspicious cases in the COMET project SmartDD. This resulted in an audit system for the whole of Austria, which was successf1lly introduced.

Impact and effect

In tracking down potential suspected cases, RAD experts have been confronted with a variety of data sources, different regional circumstances, and diverse companies and insureds. In addition, a wide variety of fraud patterns exist. As a result, they used analytics focused on specific scenarios - for example, individual business sectors, past financial incidents, or specific fraud patterns - for random reviews. Using these scenarios and time-series data, researchers at SCCH developed a model that quickly and automatically compared individual industries and firms. SCCH's task was to identify suspicious cases on the employer side in an automated way. Using an intelligent combination of machine learning methods and statistical outlier assessment, suspicious cases can be determined from

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the available data based on RAD's experience. The result is a monthly scoring list of those companies whose scores are conspicuous. The decision-making power remains with the experts. The scoring list supports the experts in the targeted selection of relevant suspicious cases. The advantage is precise and timely intervention to track down the few black sheep. The higher the scoring value of an employer in one of the lists, the greater the probability of uncovering a case of abuse.

Central system for all of Austria

The project was continuously expanded and rolled out from Upper Austria to all of Austria in 2018. To this end, the existing model was supplemented and trained with the specific data of the other provinces to reflect regional differences. The result is an all-encompassing expert system that is identically applicable to all Austrian companies. Since social fraud prevention is dynamic in terms of new fraud patterns and

legislation, the models were also designed to be dynamic and can be recalibrated as needed.

Dashboard (image source RAD), screenshot of the RAD dashboard tool: detailed view of a company.

Project coordination (Story)
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