

# How Anadolu Sigorta improved their fraud detection rate by 51% with KNIME

Anadolu Sigorta is a privately owned insurance company with offerings in non-life areas, including fire, marine, agriculture, health, and more. With 2,500 agencies in Turkey, the company plays an important role in the development of the insurance industry and in the modernization of the country's socioeconomic environment.

Backed by a strong capital base and advanced infrastructure, the company takes a pioneering approach to insurance, focused on customer satisfaction and encouraging the spread of insurance awareness throughout the country. Their unchanging principle of paying claims immediately and in full has been a source of confidence for the Turkish community.

## The growing need for better fraud detection

Fraud is becoming more prevalent across many different industries today, taking place in insurance more than others. Due to the large number of services included in different policy coverages, detecting fraud has become more challenging (and more necessary) for Anadolu Sigorta and others in the business.

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### Company

#### Anadolu Sigorta

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Insurance

Machine learning

Financial Services

Fraud detection

Insurance fraud can happen in two ways: a report of false or deceptive accident conditions by the policyholder themselves or an organized fraudster submitting false reports using the car owner's information (third-party offense). Anadolu Sigorta processes approximately 3,500 of these transactions a day. A transaction could be a net new claim or claim that needs reprocessing. Each claim must go through several phases or "touch points" (a very complex and time-consuming process) and might need to be processed more than once.

Fraudulent claims that relate to property damage or personal injury are also extremely difficult to prove, take a lot of time and research, and could be identified as a false positive. Detecting an organized fraud ring in motor insurance is also done by manual research and can take two to three months to fully investigate.

Due to the large amount of services included in insurance coverage, the complexity of processing a claim, and trying to prove the claim, Anadolu Sigorta needed an analytics approach that could streamline, expedite, and simplify the process.

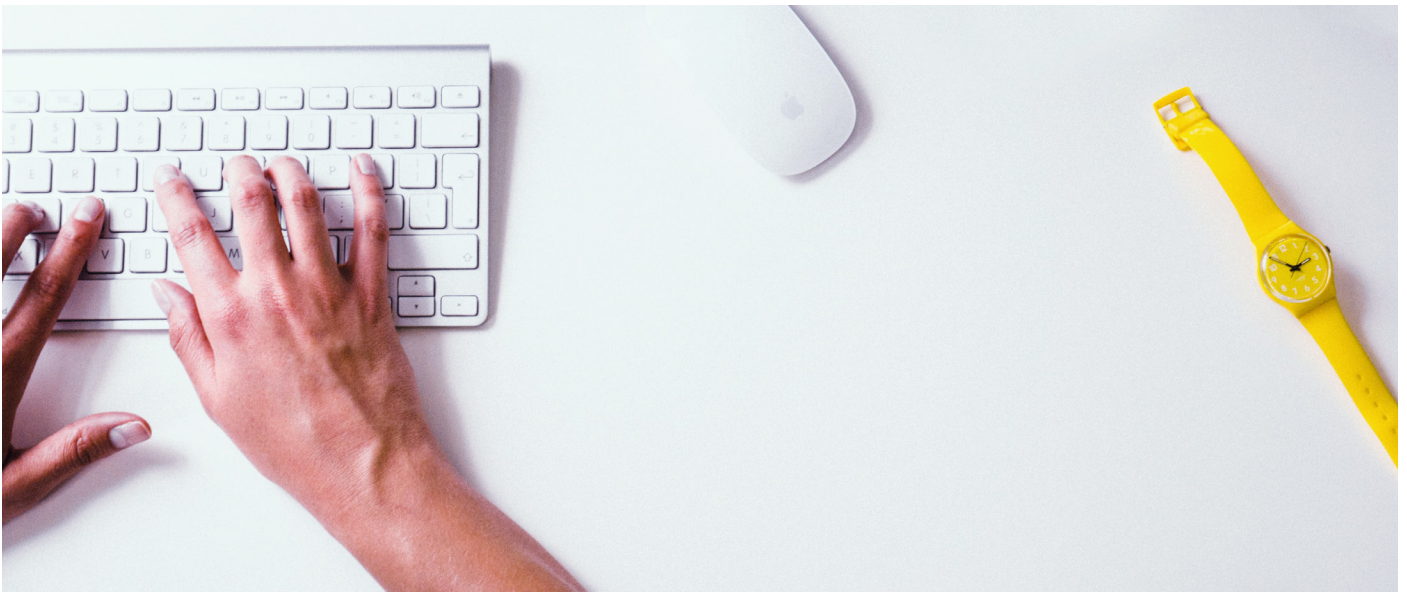


## Building a real-time, tailored fraud detection platform from the ground up

Before KNIME, Anadolu Sigorta was using a third-party solution to detect and monitor fraud. This specific tool was costly, difficult to maintain, and couldn't handle in-house updates or easily implement new features. Due to the flexibility of KNIME Analytics Platform, the team was able to build their own in-house fraud detection solution (and entire business process) called The SOBE Platform.

The input data Anadolu Sigorta uses to analyze claims comes from the company's source systems like their internal claim processing system and external sources like accident report files and data from the Insurance Information and Monitoring Center — over 20 operational systems in total. In the first phase of the project, they used KNIME to collect, transform, organize, and stabilize this data.

In addition to data preparation, KNIME Analytics Platform is also used to assist with machine learning and social network analysis (SNA). Using KNIME, the data team was able to quickly build and implement two machine learning models: one to detect and predict fraudulent claim files and another to prioritize the files based on the probability of most risky to least. Prioritizing the claims by risk probability meant business units could spend less time on false positives or low risk claims and instead focustime catching the fraudulent ones.



The company also used KNIME to build a rule engine for the next step in the claim review process. The workflow includes experience-based business standards. The platform assigns the claim a score based on the results of each stage (workflow), and the results are returned to the source system via the web service configuration. Results for each claim are provided in 5 to 10 seconds, and they expect it to happen even faster with future integrations.

By moving data analysis and audit work to KNIME, they eliminated errors and saved time on analysis — adding value to the company. What's more, costs related to maintenance, development, and subscriptions have decreased because they can now perform internal health checks themselves without any vendor dependency.

Essentially, KNIME was used to build The SOBE Platform from the ground up. They capitalized on the flexibility of KNIME Analytics Platform to build automated workflows that could process claim files instantaneously and forward them for fraud inquiry during any point in the claim review lifecycle. The SOBE Platform calculates claim file scores in real time, allowing business units to investigate and detect fraudulent activity in real time. Beyond fraud detection, Anadolu Sigorta was also able to use KNIME to create insurance renewal probability workflows, price optimization analysis and a customer analytics platform.

## **Saving 146 million in payments from fraudulent claims**

Anadolu Sigorta can process claims and detect fraud faster and easier since implementing KNIME. They've achieved a 51% greater detection rate and a 54% increase in financial gain by preventing approximately 146M Turkish Liras in payments from fraudulent claims. What's more, false positives have decreased by 31% and implementation and maintenance is done in house, costs less, and is much easier.

The SNA module significantly improved the organized fraud detection processes and reduced the effort and identification period from 3-4 months down to only 2 hours. What's more, they were able to successfully discover 8 new organized crime rings via this module. Their fraud platform is now a one-of-a-kind when it comes to configurations and structure compared to other tools on the market.



In addition to operational efficiency gains, Anadolu Sigorta was able to train business users on data science applications using KNIME. Because KNIME doesn't require any coding, non-experts in data can create and run their own processes to solve technology issues. As an organization, Anadolu Sigorta has upskilled over 200 people in IT and other business units on how to apply data science.

## Why KNIME

Anadolu Sigorta chose KNIME software due to its ease and speed of implementation. Building models with KNIME can be done very quickly, and their team can use existing nodes already built and available via the KNIME Hub. The team also loves KNIME for auditability and transparency of the process due to its ability to log steps while building a workflow. KNIME also integrates with different programming languages and algorithms that the team uses, like Python, R, Java Script, etc. Lastly, they like that end users can make transactions through a data app and change, alter, or define new rules to that app, if needed.

KNIME was chosen in terms of business considerations because of its simplicity. The API integration was easy to implement and the AI features for machine learning models were easily explainable to others. Both of these features allow the team to manage and trace outcomes accordingly.