Scheer | PAS

AI-based plausibility check of accident reports with Scheer PAS

POLIZEI

Challenge

The Saarland police have been working on process automation and digitization for quite some time. A shortage of personnel and the growing complexity of certain tasks call for intelligent solutions that relieve the highly qualified staff of time-consuming, cost-intensive and error-prone routine jobs.

Solution

In joint deliberations with the Saarland police, a process was quickly identified which – previously performed completely manually – offered great potential for automation due to the high degree of standardization and the large number of cases: the plausibility check of accident reports. By automating this process, Scheer PAS and Scheer.ai were to be used to demonstrate – with a reasonable investment of time and resources – how staff can be relieved of time-consuming administrative work through the expedient use of innovative technologies.

Benefits

- High time savings and increased efficiency through automation of the tests
- No more media breaks (previously: data processing in Excel, lack of integration into the specialist system)
- Automated data collection and plausibility checks of more than 35,000 accidents per year
- Increased quality and minimized errors in the tests

Police in the Saarland

The police of the Saarland is a German state police force with around 3200 employees, of whom roughly 2700 are police officers. The state police headquarters reports to the Ministry for Internal Affairs, Construction and Sport of the Saarland. Its tasks include the prevention of risks, the guaranteeing of public safety and order, the fight against crime and criminal prosecution as well as traffic surveillance.

For this, the police need the correct and relevant information at all times in order to fulfill their duties, also as part of road safety work in combating traffic accidents.

Core components

- Scheer PAS
- Scheer.ai for text classification on the basis of deep learning
- Microsoft Azure for training the AI component

"With this AI-aided plausibility check of the accident reports, we are relieving our highly qualified staff of important but monotonous work, and at the same time ensuring that the check is carried out in high quality and with very high efficiency. That is very convenient for us due to the increasing complexity of case processing and the tight personnel resources. It makes the performance of the work easier and increases the quality. We're becoming even more professional."

Klaus Bouillon, Minister for Internal Affairs, Construction and Sport

Shortage of personnel and too many manual routine jobs

The Saarland police have been working on process automation and digitization for quite some time. Increasing shortages of personnel, the growing complexity of certain tasks and the large number of manual routine jobs call for intelligent solutions. How can highly qualified staff be relieved of time-consuming, cost-intensive and error-prone routine jobs? Monotonous and redundant processes need to be streamlined, optimized and automated in order to increase process efficiency and data quality.

Manually — Traffic accident statistics request

Manually — Plausibility check of each individual transaction

Manually — Maintenance of entries to be corrected in a list

Manually — List forwarded to responsible police department

Plausibility check process to date

Motivation through initial successes with artificial intelligence

Even today, innovative technologies are already being successfully employed by the police in various areas, such as the security screening of applications for residence permits, in order to process the large numbers of applications efficiently and with minimum tie-up of staff resources. The extensive automation of this process has now enabled 85% of the time to be saved.

After joint deliberations with the Saarland police, a further process was quickly identified which – performed completely manually to date – offered great potential for automation due to the high degree of standardization and the large number of cases: the plausibility check of accident reports.

Special features of the plausibility check of accident reports

All data recorded at the scene of an accident is input into POLADIS, the incident processing system, a specialist application for the accident statistics, among other things. For the plausibility check, the data has to be exported from the system and then checked one by one. In addition to the accident report, further parameters such as the accident cause and the accident type are added. The technical correctness of the data is important, as it forms the basis for further far-reaching – and also legally relevant – analyses and for traffic accident statistics. If discrepancies are discovered during the check, the documents are returned to the original reporting officer for correction. The manual checking of each case makes the process extremely time-consuming, even though the data is correct in the vast majority of cases.

Higher efficiency and minimized error

This is exactly where the solution comes in. In future, only those cases that need to be corrected will be returned to the original reporting officer for checking; all others where a clear allocation can be made by the AI will no longer be checked manually. The process is now to be automated and the plausibility of the data ensured with the aid of artificial Intelligence. The latest technologies from the field of natural language processing are used to interpret the technical language of the accident reports and to allocate them to the relevant categories.

Automated	Automated	Manually	Automated
Cyclic retrieval of new data depending on responsibility	Automated check by Scheer.ai in >80% of all cases	Processing of "uncertain" cases by case administrators	List forwarded to responsible police department

Plausibility check process in the future

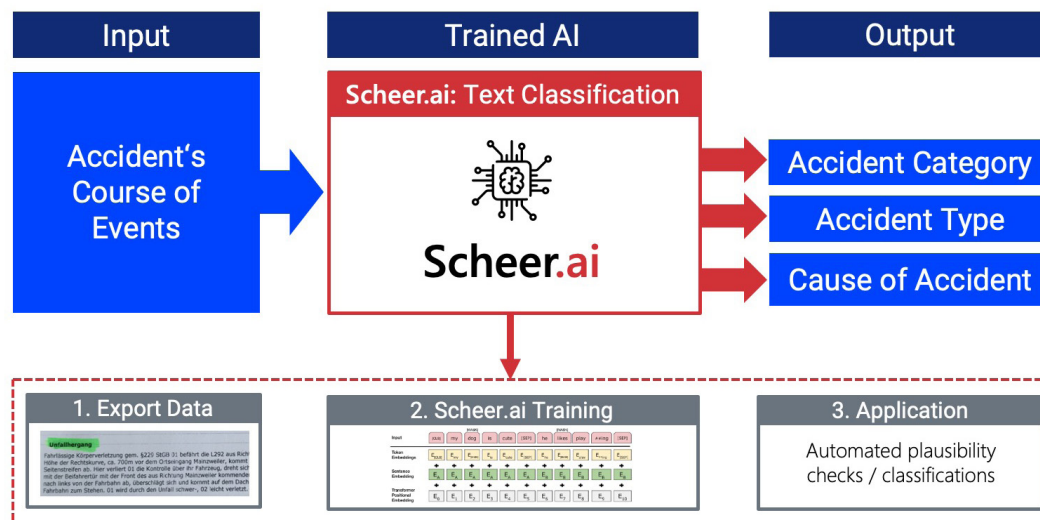## Excursion Road traffic accident statistics

The road accident statistics provide data on the number of accidents, the persons involved in the accidents, the number of persons injured as a result of the accident as well as on the causes of the causes of accidents and the severity of the accident consequences. The enables an accident situation report (assessment of the local and supra-local accident situation) to be prepared. The statistics are collected according to uniform national rules.

The results of the traffic accident statistics form an important basis for obtaining knowledge about the occurrence of accidents and their development. They are indispensable for the following:

- observation of the current accident situation and its development in the national, but also international comparison
- identification of problem areas in road safety and the categorization of risk groups
- the development and preparation of decisions, measures and planning projects in the field of transport policy
- measuring and evaluating the effectiveness of decisions, measures and other influences on road safety
- police and local authority road safety work
- the work of the traffic accident commissions

How it works

For each of the categories "accident cause", "accident type" and "accident category", Scheer.ai trains a deep neural network based on state-of-the-art frameworks that ultimately performs the categorization. During the project, an interface was created for the integration of the accident reports to be checked with Scheer PAS that enables the seamless integration of Scheer.ai into the existing process and existing IT systems. The pure accident reports without personal data are exported from the source system and then automatically checked for plausibility. Scheer PAS thus integrates all the components, such as AI, incident processing system, etc. necessary for the smooth implementation of the process.

| Input | Trained AI | Output |

Scheer.ai: Text Classification

Accident's Course of Events → Scheer.ai → Accident Category / Accident Type / Cause of Accident

1. Export Data	2. Scheer.ai Training	3. Application
		Automated plausibility checks / classifications

AI-based classification of accident reports

Benefits for the police in the Saarland

- Reduction in the workload by over 80%

- High time savings and increased efficiency through automation

- No more media breaks (previously: data processing in Excel, lack of integration into the specialist system, manual checks)

- Automated data collection and plausibility checks of more than 30,000 accidents per year

- Increased quality of and error minimization in the checks thanks to self-learning AI

- Impetus for the expansion of process automation and AI into other areas

- No evaluation or use of personal data required

- Secure operation in accordance with data security legislation in a dedicated infrastructure environment

About us – Scheer PAS

Scheer PAS is an innovative software company assisting companies and organizations
in implementing changes in processes and applications as quickly and smoothly as possible as part of their digitization efforts.

Let's talk change!