SHIFT

How advanced AI and document analysis is helping insurers fight digital risk

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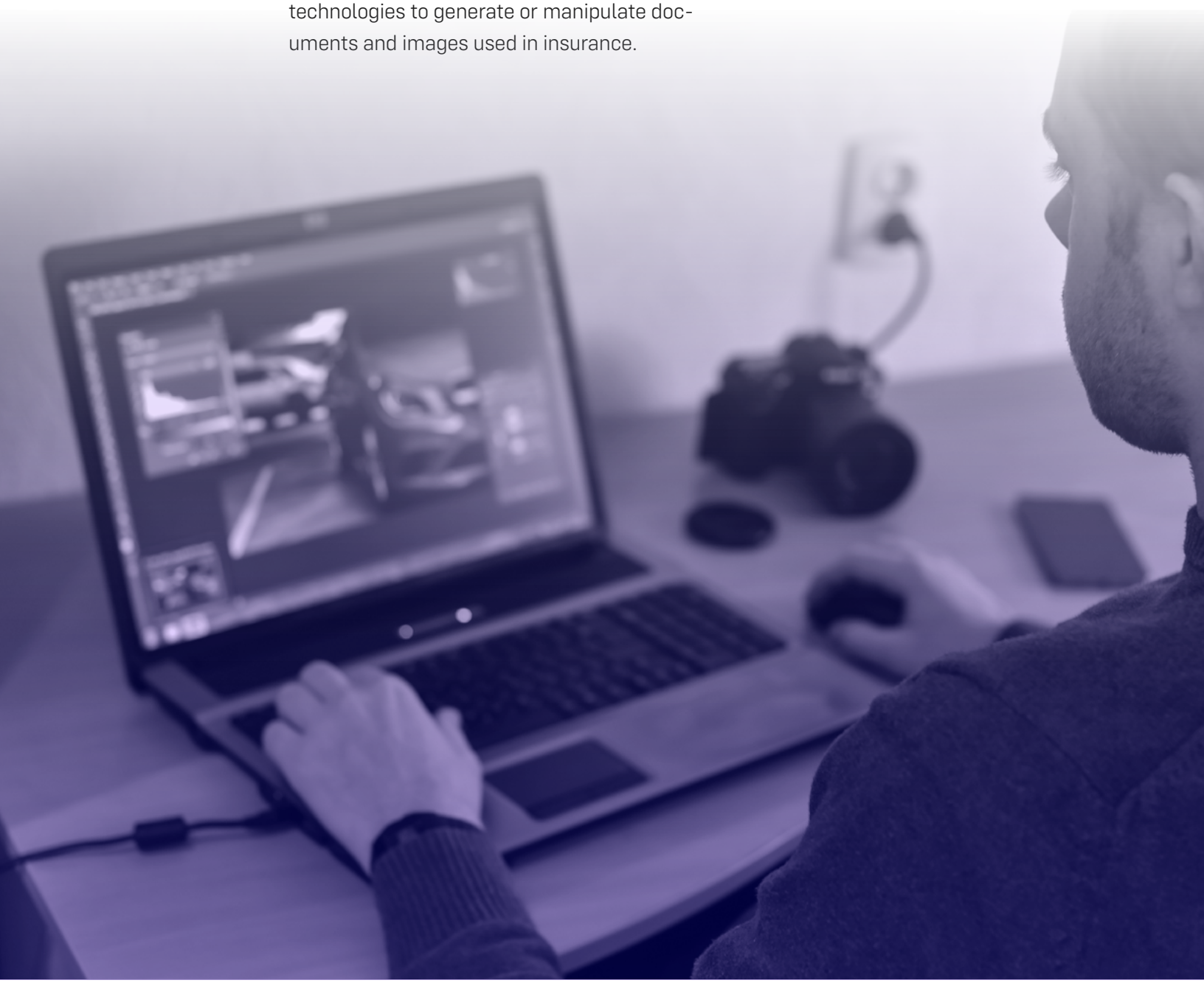
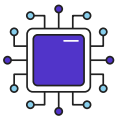
AI technology has now truly moved out of the hands of the very technical into the realm of the everyday person. With tools like Midjourney, DALL-E 3, or Firefly readily available for individuals to create content, documents, videos and audio files with basic skills, there are very few barriers to leveraging these kinds of technology. Unfortunately, it means that individuals can use these AI technologies to generate or manipulate documents and images used in insurance.

This poses a completely new threat for insurers as both organised and opportunistic fraudsters take their approach to the next level. The phrase "Fight fire with fire" certainly applies. Let's look at some of the latest fraudulent uses of these and how the technology can be used in return.



Applicable Technology



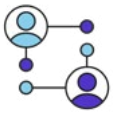
Generative AI
Generative AI is a branch of artificial intelligence that focuses on creating new data, content, or outputs based on patterns and insights learned from existing datasets

Machine Learning (ML)
A subset of AI that enables machines to learn from data without explicit programming. It allows systems to improve their performance over time through experience

Network Analysis
The process in which data is collected and analyzed to identify individual connections to a broader network

Supervised Learning
A type of machine learning where the algorithm is trained on labeled data, and it learns to make predictions based on this input-output mapping

Unsupervised Learning
A type of machine learning where the algorithm learns patterns and structures from unlabeled data without explicit guidance



Entity Resolution (or Reconstruction)
The identification and consolidation of separate entities in a data source that actually represent the same real-world entity

Reinforcement Learning
A type of machine learning where an agent learns by interacting with an environment

Document Analysis
A type of analysis that gathers metadata, image, and text information to extra insights from documents for use in machine learning

Real life use cases of how these technologies have been leveraged to detect and prevent a multitude of advanced document fraud scenarios for insurers.

Exaggeration of damage

Fraud method: Organized crime rings around the world stage motor accidents, declaring damage. Using AI tools, the accidents can be exaggerated, with images of other cars and invoices, manipulated invoices, or generated images provided as evidence.

Impact: The insurer pays an inflated claim cost for what in reality may be minor damage, and over hundreds of organised claims is significant leakage.

Advanced AI approach: Shift uses Generative AI to classify the type of image or document, and then uses multi-layer predictive models to detect generated or manipulated images, and re-use from prior claims or public sources, alerting handlers of the most suspicious cases as a priority.

Example of an image that fraudsters are able to create or edit via Generative AI. Shift analyses aspects of the image, including pixel analysis (inset), for any inconsistencies or unusual attributes which might otherwise be missed on manual inspection.

Analysis of handwritten accident reports and sketches

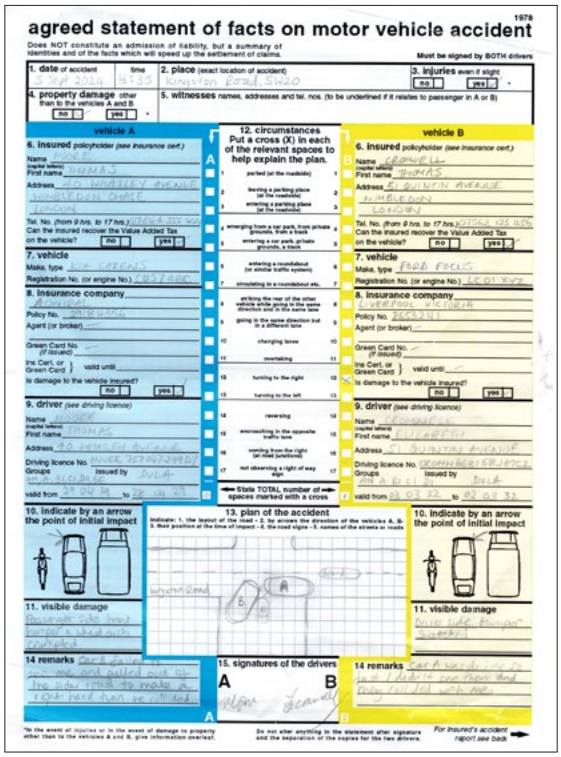
Fraud method: Auto accident police reports are regularly submitted using paper forms containing handwriting and pencil sketches of the scene and scenario, which often contain honest mistakes and inconsistencies. As a result, bad actors take advantage of the fact that manual checks of all details in a report are time consuming, altering official statements, vehicle details, damage descriptions and more, with the hopes of deceiving.

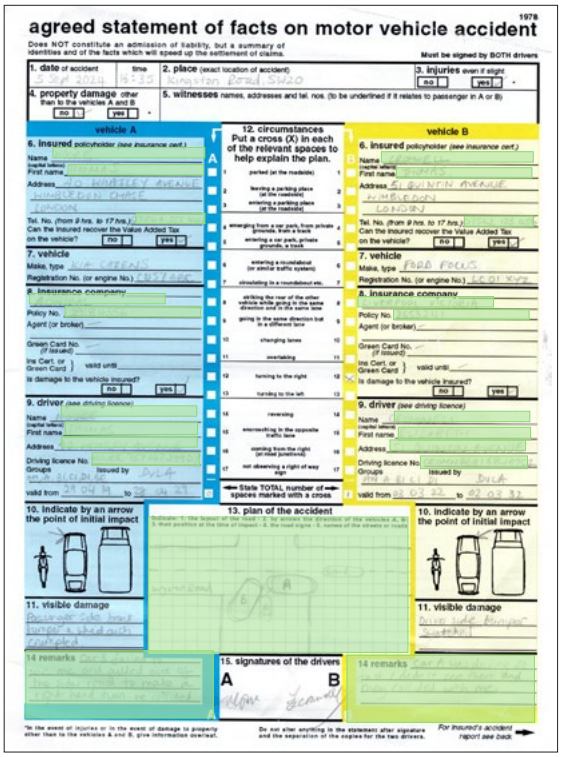
Impact: Insurers settling claims risk paying out significant amounts more than they are liable for, eventually increasing the premium of the genuine customers that they want to retain.

Advanced AI approach: Generative AI classification followed by advanced OCR from Azure Document Intelligence can consume handwritten text and extract it into structured data.

Shift document analysis can identify "Areas of interest" in the document to extract further information from checkboxes for example:

Generative AI document assistance, part of Shift's Case Management, can further summarize handwritten documents for faster analysis and investigation.





Worker's Compensation Disability invoice manipulation

Fraud method: Fraudulent worker's compensation and employee disability benefits beneficiaries are able to use Generative AI and other tools to create completely ficticious documents and invoices for care and treatments they never received to get quick cash back.

Impact: Instances of manipulation networks within an employer have seen insurers face potentially millions in additional claims cost.

Advanced AI approach: Character recognition pulls out key document information to make comparisons and discover anomalies, along with text inconsistency. Shift has found inconsistent invoice figures, dates that do not match claims and other inconsistency checks.

Automating lengthy manual searching

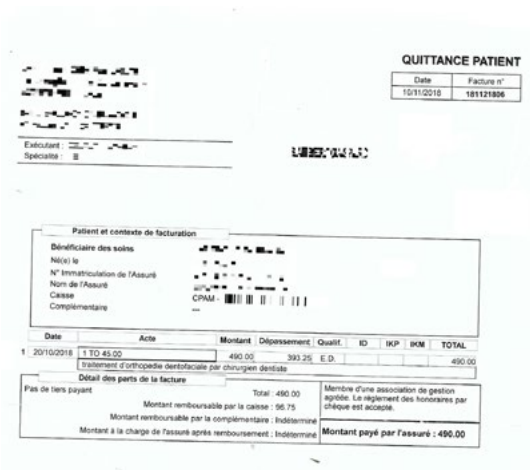
Fraud method: Fraudsters use AI tools to create clever artefacts to embellish their claim and reuse previous documents and images, gleaning materials from the internet.

Impact: Fraud in domestic property is thought to be as many as 1 in 10 claims, and the reuse of images as evidence is easy for fraudsters to achieve and time consuming for insurers to check.

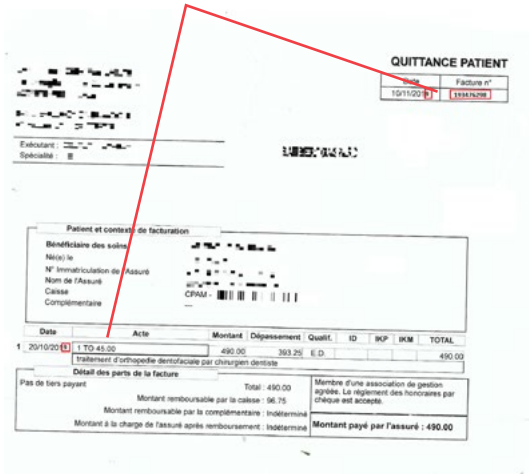
Advanced AI approach: Instant document and image comparison with entire claims history database and external sources highlighting potential image reuse.

This example shows how a fraudster in a French speaking region has changed the date of the invoice but not changed the document reference number which also contains date details.

Document original (2018) internet



Document modifié (2019)



Travel cancellation for fake illness

Fraud method: Opportunistic fraudsters, not wanting to waste vacation money when they accidentally double booked their schedules, will claim sickness prevented them from going.

Impact: Insurers are left with paying out for someone else's mistake usually due to lack of evidence to prove the fraudster is in the wrong.

Advanced AI approach: OCR quickly analyses the handwritten form, structures the data and makes basic checks such as dates of first symptom, travel and treatment dates and patient details to instantly flag anything that looks suspicious or inconsistent before claims are paid.

Conclusion

Digital fraud is increasing in both volume and complexity passing undetected through rules based and manual checks. Advanced technical fraud requires very advanced technical detection that is always multiple steps ahead and learning tomorrow's potential fraud from today's patterns.

SHIFT

About Shift Technology

Shift Technology is the leading AI platform for insurance. Shift combines generative, agentic, and predictive AI to transform underwriting, claims, and fraud & risk—driving operational efficiency, exceptional customer experiences, and measurable business impact. Trusted by the world's leading insurers, Shift delivers AI when and where it matters most, at scale and with proven results.

Learn more at www.shift-technology.com.