



AI and e-evidence - New Turn for Defense Rights?

OCTOPUS Workshop 8 –

Cybercrime, e-evidence and artificial intelligence

Prof. Dr. Sabine Gless

Faculty of Law, University of Basel/Switzerland


CoE/ CDPC rapporteur on AI and Criminal Law

AI generating «automated leads»/e-evidence, e.g. smart cameras

THE CONVERSATION
Academic rigour, journalistic flair

COVID-19 Arts + Culture Business + Economy Cities Education Environment + Energy Health + Medicine Politics + Society

Science + Technology



Caught red-handed: automatic cameras will spot mobile-using motorists, but at what cost?

November 3, 2019 6.55pm GMT

AI generating «automated leads»/e-evidence, e.g. automated auditing

Towards Automated Auditing with Machine Learning

Rafet Sifa, Anna Ladi, Maren Pielka, Rajkumar Ramamurthy, Lars Hillebrand, Birgit Kirsch, David Biesner, Robin Stenzel, Thiago Bell, Max Lübbering, Ulrich Nütten, Christian Bauckhage
Fraunhofer IAIS
Germany

Ulrich Warning, Benedikt Fürst, Tim Dilmaghani Khameneh, Daniel Thom, Ilgar Huseynov, Roland Kahlert, Jennifer Schlums, Hisham Ismail, Bernd Kliem, Rüdiger Loitz
PriceWaterhouseCoopers GmbH WPG
Germany

ABSTRACT

We present the Automated List Inspection (ALI) tool that utilizes methods from machine learning, natural language processing, combined with domain expert knowledge to automate financial statement auditing. ALI is a content based context-aware recommender system, that matches relevant text passages from the notes to the financial statement to specific law regulations. In this paper, we present the architecture of the recommender tool which includes text mining, language modeling, unsupervised and supervised methods that range from binary classification models to deep recurrent neural networks. Next to our main findings, we present quantitative and qualitative comparisons of the algorithms as well as concepts for how to further extend the functionality of the tool.

KEYWORDS

Text Mining, Business Process Optimization, Automated Auditing



Figure 1: Screenshot of the engagement view of our accounting list recommender system. The left column contains progress indicators and checklist questions, the column in the middle displays the recommendations, and the column on the right highlights recommended results in the report.

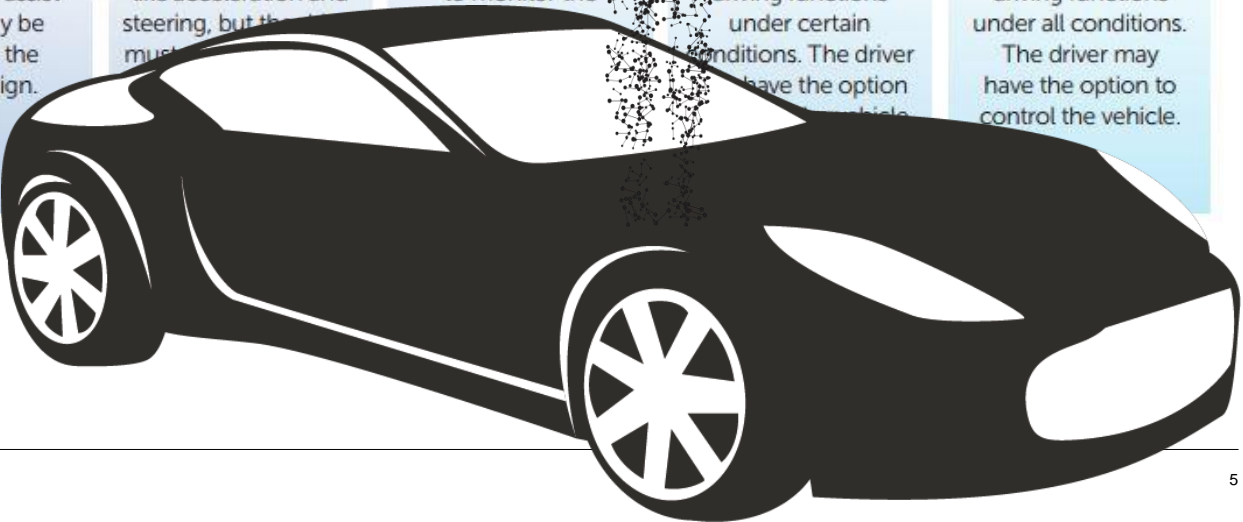
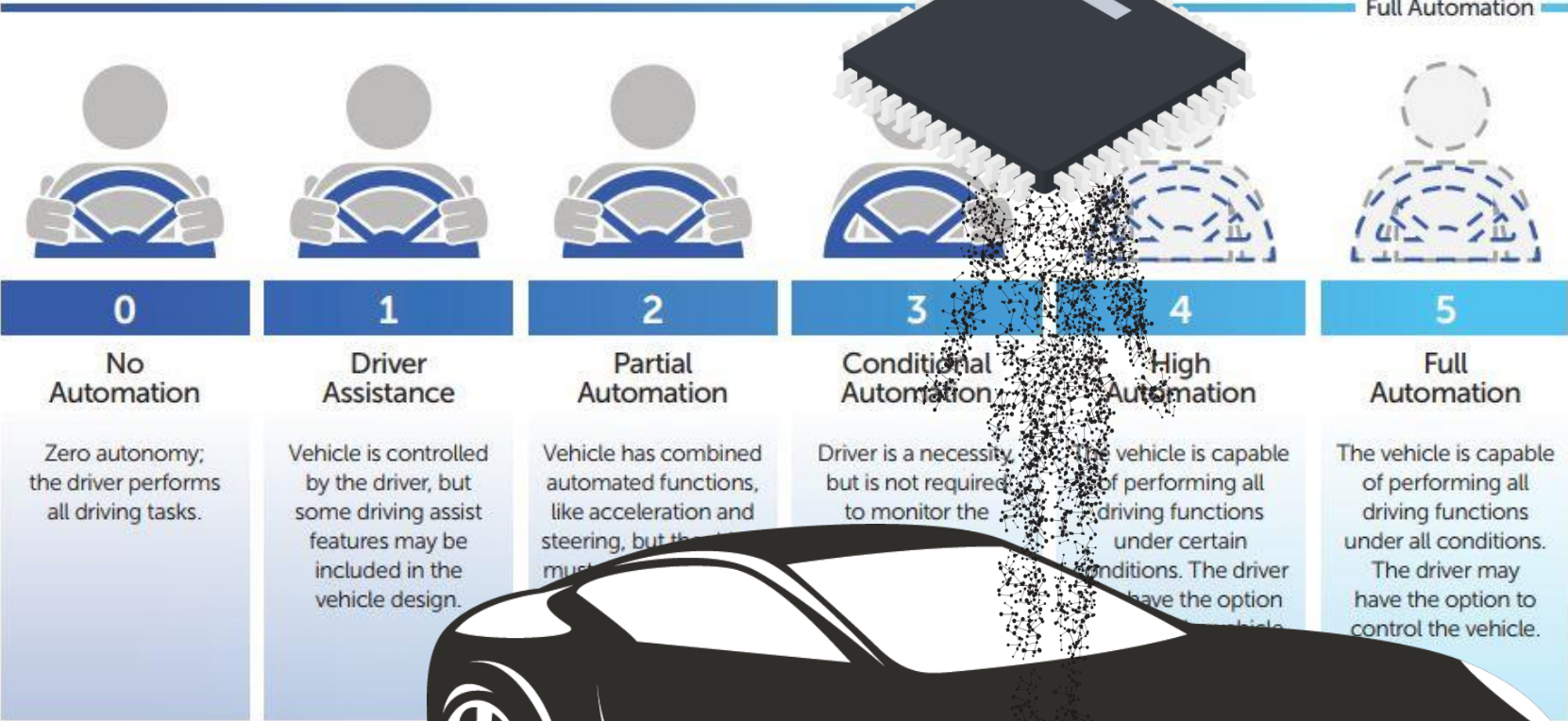
which aim at providing further details and communicating the

AI creating a new generation of evidence? e.g. alerts issued by drowsiness detection systems



AI monitoring human drivers as a consequence of driving automation

SAE AUTOMATION LEVELS



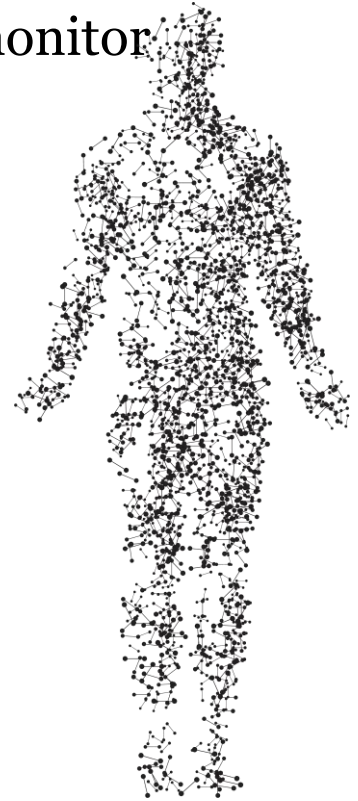
Trustworthy «AI witness»?

Driving assistants monitor (human) drivers to ensure availability for take-over-requests.

Driving assistants store sudden steering movements, monitor signs of drowsiness and record their “observations”.

(How) Can we use such «machine evidence» or «robot testimony» in criminal court room?

(How) Can we evaluate trustworthiness (and fairness) of «robot testimony» in criminal cases?



Trustworthy «AI witness»?

Art. 6 (3) ECHR

Everyone charged with a criminal offence has the following minimum right ...

(d) to examine or have examined witnesses against him and to obtain the attendance and examination of witnesses on his behalf under the same conditions as witnesses against him; ...

- analyzing front-design, machine learning, error rates?
- addressing the 'black box'-problem?
- ...?



Literature:

Gless, Sabine / Weigend, Thomas, Intelligente Agenten als Zeugen im Strafverfahren, *Juristenzeitung* 2021, 612

Gless, Sabine, AI in the Courtroom: A Comparative Analysis of Machine Evidence in Criminal Trials, *GJIL*, vol. 51 (2020), 195

Gless, Sabine, Predictive Policing – In Defense of ‘True Positives’, in: Emre Bayamlioğlu, Irina Baraliuc, Liisa Janssens, Mireille Hildebrandt (eds). *Being Profiled: Cogitas Ergo Sum. 10 Years of Profiling the European Citizen*, Amsterdam University Press 2018, 76

Roth, Andrea, Machine Testimony, 126 *Yale L.J.* (2017), 1972

Vuille, Jöelle / Luparia, Luca / Taroni, Franco, Scientific Evidence and the Right to a Fair Trial under Article 6 ECHR, 16 (1) *Law, Probability and Risk*, 2017, 55



University
of Basel

Faculty of Law



Thank you for your attention!

Sabine.Gless@unibas.ch